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THE PROPAGATION AND PREVENTION OF RABIES.*

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It is now generally accepted by those who have most carefully studied the subject that Rabies is a purely contagious disease, due to a virulent principle or specific agent, and is, as a rule, transmitted from a diseased to a healthy creature by inoculation. The specific agent, when introduced into the body of a susceptible animal, more particularly localises itself in the nervous system; and after a certain period—which is somewhat indefinite in accidental inoculation, but definite in experimental inoculation—causes such disturbance in the functions of the brain and spinal cord, as to give rise to well-marked symptoms, and a morbid condition that, it may be asserted, invariably terminates in death.

Inoculation and infection occur through wounds, which are generally inflicted by the teeth of creatures affected with Rabies.

Of all the domesticated animals that may become affected, the dog is certainly the one which is by far the most frequently attacked, and it is the one which perpetuates the malady; it is undoubtedly the chief, if not the only, propagator of the scourge in this and other countries; and it is, therefore, exceedingly probable—nay, certain—that if the canine species were completely freed from Rabies, the disease would be no longer known.

Recognising this fact, and in view of the constant virulency of the saliva of rabid animals—and, consequently, of danger from their bites, and the serious consequences resulting therefrom—the importance of sanitary measures applicable to this animal cannot be over-estimated. In the interests of mankind, no less than in

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those of the domesticated animals—and particularly of the dog itself—this very alarming, most painful, and always fatal disorder should be suppressed. And of all the known contagious diseases, Rabies is the one which can be most easily and quickly extinguished, provided proper measures are prescribed, and are carried stringently and energetically into operation.

The measures necessary for the extinction of the disease must be based on the fact, that the dog is the chief—nay, sole—propagator of Rabies; that the contagium, or infecting material, is conveyed from the diseased to the healthy by means of bites (other means are so exceedingly rare that they may be left out of consideration); and that to free a country from it, all rabid and suspected dogs should be destroyed, certain restrictions maintained for a limited period, and only dogs from other countries exempt from Rabies allowed admission. Dogs coming from infected or suspected countries, if admitted, should undergo a period of quarantine equal at least to the longest period of latency of the disease.

That the disease can be limited, or altogether suppressed by the enforcement of proper measures, there is an abundance of evidence to prove. Sweden, Norway, Switzerland, Baden, Prussia, Bavaria, Wurtemburg, and other countries have been freed from it by such measures; while countries in which it has never been seen, as Australia and New Zealand, are preserved from its invasion by such precautionary measures as quarantine of imported dogs, or, as in Sweden, total probibition of importation of dogs.

That the dog is the chief sufferer from, and, it may be asserted, the sole propagator of, the malady is amply proved by every-day experience; but the following table, showing the number of cases of Rabies in England during the four years 1887-90, and the number and species of animals affected, affords further evidence:—

Kind of Animal.	1887.	1888.	1889	1890.
Dogs - - - -	217	160	312	129
Cattle - - - -	11	2	9	2
Sheep - - - -	5	7	11	—
Swine - - - -	3	—	4	1
Horses - - - -	4	5	4	2
Deer - - - -	257	2	—	—
To'al - -	497	176	340	134

It will be observed that in 1888 and 1889, 90 and 91 per cent. of the animals reported as rabid were dogs, and in 1890 the percentage was more than 96. The animals other than dogs were

infected by rabid dogs, and these infected each other; as the mad dog has always the strongest tendency to attack its own species, it follows that this furnishes by far the largest proportion of victims.

The suppressive sanitary police measures are, in the order of their importance:—1. Destruction of all dogs which are rabid, or which are suspected of being or becoming rabid; 2. The seizure and, if need be, destruction of all ownerless and wandering dogs; 3. All other dogs to wear a properly-constructed and well-fitting muzzle while Rabies prevails, and also for a period equal to the longest interval of latency after the malady has been suppressed; 4. The imposition of a tax upon all dogs.

1. The necessity for the destruction of all rabid dogs is so self-evident, that it need not be further insisted upon. The disease is incurable, causes much suffering, and the affected dog is, as long as it lives, so great a danger to other creatures that its speedy destruction is imperative. Dogs which are suspected of being rabid, or of becoming so, through contact with those which have been affected, must always be a source of grave apprehension and danger; and unless they can be kept under close and safe observation for a considerable time, should also be destroyed, seeing the risks incurred in allowing them to live.

A suspected dog may be defined to be one that presents symptoms resembling those of Rabies, or which has been in conditions that have rendered infection probable or possible.

2. Wandering dogs are the chief agents in the propagation of Rabies, for the reason that they are more exposed to contamination than those which are properly cared for; and also because rabid dogs, even when carefully guarded, seek to wander from home. In proportion as wandering dogs abound in infected countries, so is the disease prevalent. This is a well-established fact. In England in 1888, of 160 rabid dogs, 64—or 40 per cent.—were returned as stray ones; in 1889, of the 312 rabid dogs reported, 121—or more than 38 per cent.—were evidently ownerless; while in 1890, 64 out of 129—or more than 51 per cent.—were so returned.

Therefore, in order to limit the propagation of Rabies, all wandering dogs should be secured, and, if not claimed within a certain period, destroyed.

3. Rabies being transmitted, as a rule, by the bites of dogs—and as in countries in which the disease prevails there can be no certainty when a dog is not infected—if it at all times be prevented from inflicting wounds by its teeth, it is evident that the danger of extension of the malady must be reduced at least to a minimum. Dogs can be hindered from biting by compelling them to wear a

properly-constructed muzzle; and if it fits well, it should cause very little, if any, inconvenience to them.

Rabid dogs sometimes escape from home without their muzzles, and the absence of these is an indication that they should be seized; and wandering and ownerless dogs are also known by their not wearing muzzles, and can therefore be secured by the police.

The value of the muzzle in suppressing Rabies has been demonstrated on many occasions; and in serious outbreaks of the disease its introduction has always coincided with a diminution in the number of cases, and the eventual extinction of the scourge. Its use is also coincident with a decrease in the number of cases of Hydrophobia occurring among people during such outbreaks, and the ultimate cessation of these cases.

The evidence in support of this statement is so voluminous and explicit that anyone examining it must be convinced as to the certainty of the fact. Two or three instances may be cited.

In the Report of the Royal Commission on Rabies, it is stated that "in the city of Berlin special regulations are in force. In consequence of a severe outbreak in the year 1852, during which 107 dogs were destroyed as rabid, the Royal Police issued a decree on July 2nd, 1853, to the effect that all dogs should be provided with a wire muzzle positively preventing the animal from biting, and to empower special persons appointed by the police for that purpose to seize and destroy all dogs not so muzzled; and, when the owner could be found, imposing a fine of ten thalers (£1 10s.) or a term of imprisonment. In the year following this decree, only one dog was killed as rabid, against 97 in the previous year. The decree still remains in force, but does not seem to have been effectual in preventing the recurrence of epidemics of Rabies; for the number of dogs killed as rabid, which up to 1863 had not exceeded in any year 9, rose progressively in the succeeding years, till in 1868 the number had reached 66, declining again to 7 in 1870, only to increase in 1872 to 69. In 1875 a law was passed, extending to the whole of Prussia, for the suppression and prevention of animal disease, which provides that all dogs suspected of Rabies shall be immediately killed, as also all animals which it is evident have been bitten by rabid animals; and that all dogs in a district which has been infected by an outbreak of Rabies shall be confined, or, when abroad, both muzzled and led. The technical section of the Veterinary Board in Berlin are of opinion that the passing of this law, and not only the existence of the muzzling order in that city, is the cause of the extinction of Rabies in Berlin; no case has occurred there since 1883."

In Vienna, we are informed that Rabies was entirely suppressed by eighteen months of stringent muzzling; but in the summer of 1886 the muzzling order was rescinded, and badges had to be worn on dogs' collars instead. In the following half-year there was only one case of the disease; but in the next half-year Rabies became epizöotic and the muzzle had again to be worn, with the result that the malady soon subsided and disappeared. Consequently, the muzzling order is still rigidly and most beneficially enforced in Vienna.

In Holland, before 1875, Rabies was prevalent to a very serious extent; but in June of that year the use of the muzzle was ordered, with the result that in the autumn the number of cases fell to 41; in the next whole year they were 55; in 1877 they were 14; in 1878 they were 4; and in 1879 they were 3. These and the cases which have since been reported only occurred on or near the frontier of Belgium, in which country the muzzle is not in use, though Rabies is always prevalent. To such a degree, indeed, does the disease exist in Belgium, that in 1889 there were brought to the Veterinary School at Brussels no fewer than 94 really rabid dogs, 49 having been admitted during the winter quarter, and 45 during the summer quarter; and from January 1st to April 24th, 1890, 16 were taken there.

In the Grand Duchy of Baden, during the years 1871, 1872, 1873, 1874, and 1875, the number of cases of Rabies were respectively 18, 37, 37, 50, and 43. Then the muzzle was rigorously applied, and in 1876 there were 28 cases; in 1877, 3; in 1878, 4; in 1879, 2; in 1880, 2; in 1881, 2; in 1882, 3; in 1883, 2; in 1884, 2. Since that year only one case has been observed, and that was a dog from Metz, where there were no proper regulations, and which had been contaminated before its arrival at Baden.

In Sweden, Rabies was at one time a somewhat common disease, and from 8 to 10 people died annually of Hydrophobia; but on muzzling being enforced, and the importation of dogs prevented, Rabies has been unknown for many years, and no deaths from Hydrophobia have occurred since 1870.

In England, the value of the muzzle has been as well exemplified as elsewhere, though its application has always been extremely partial, being only employed in towns or districts when Rabies has increased to such an extent as to create alarm, and removed immediately when the disease had for the time disappeared. No effective action has at any time been taken to suppress it in England or Ireland; in the latter country it is always more or less prevalent, and ever since it was first legislated for in England, it has maintained a permanent existence in the following fourteen

counties, viz., Chester, Derby, Essex, Hants, Kent, Lancaster, London, Middlesex, Notts, Surrey, Sussex (East), Sussex (West), Warwick, and York (W.R.). During the past year cases of Rabies were reported for the first time in three counties previously free from it; these were Bucks, Norfolk, and York (E.R.); and it was re-introduced into Leicester after an absence of two years, and into Stafford, which had been free for one year.

The extent to which Rabies has prevailed in this country may be judged from the loss of human life through bites from rabid dogs. It is stated that in England (including Wales) there have been 939 deaths from Hydrophobia recorded during the past 38 years, the yearly average for the first 16 years being 8, for the next 16 years 15, and for the remaining period ending 1885 45. Thus, the mortality has steadily advanced through more than 400 per cent. On the other hand, the Prussian preventive measures have reduced deaths from Hydrophobia to a remarkable degree; for while, in the decade ending in 1819, there was a yearly average of 166 deaths, in a similar period ending in 1886 there was a yearly average of 4½.

The value of the muzzle in suppressing Rabies has been, perhaps, best demonstrated in London on several occasions, and especially in 1885. In the previous years, Hydrophobia had increased to a very alarming extent, as has just been mentioned, in England, and no steps worthy of note had been taken to check the mortality. For London alone in that year no fewer than 27 deaths of people were reported as due to the bites of rabid dogs. A muzzling order was then enforced, and at the end of 1886 not a death was recorded. Unfortunately, the order prescribing the use of the muzzle was then rescinded, and in a few months a case of Hydrophobia occurred in the South of London, soon to be followed by others, and in 1889 10 deaths were registered. In July of that year the muzzling order was again issued and stringently carried out, and Rabies and Hydrophobia once more disappeared.

In other countries where Rabies prevails and dogs are not muzzled, though other measures—as the dog-tax, medal on the collar, leading by a leash, etc.—are enacted, the malady continuously manifests itself, and numbers of people perish from Hydrophobia every year. We may give Belgium and France as examples. In the latter country, the monthly sanitary bulletin shows to what an extent it is prevalent; and I need only refer to the two last bulletins which I have to hand—those for March and April of the present year. In March, 132 dogs and 8 cats were destroyed as rabid, besides those sacrificed as a preventive measure; while 32 persons were bitten by mad dogs, as well as

cattle and pigs. In April, 151 dogs and 4 cats were destroyed because of being rabid, and a large number were killed because they had been bitten by mad dogs or were wanderers; and 47 persons were wounded by mad dogs. The reports of the Pasteur Institute show that by far the largest proportion of persons protectively inoculated are French. There can be no doubt that if the use of the muzzle were enforced generally and strictly throughout France, Rabies would quickly vanish from the sanitary bulletins.

Belgium has tried all the other recognised measures except the muzzle, and yet the malady is as rife and deadly as ever. A Royal Commission was recently appointed to inquire into the subject, and the report addressed to the Superior Council of Hygiene in April last states that the regulations in force are insufficient; and while not contesting the value of Pasteur's preventive inoculations with regard to people bitten by rabid dogs, it is urged that there is something far more desirable, and that is the extinction of the disease in the canine species. For this object, the Commission insists upon the immediate adoption of the muzzle.

Senseless sentimentality has opposed the use of this article in a most extraordinary manner in this country, and one would be inclined to believe that there are people who care less for human suffering and human life than for a little inconvenience or discomfort to dogs. A well-fitting muzzle should cause very trifling inconvenience and discomfort, while ensuring absolute safety from dog-bite. Repeatedly, rabid dogs have been brought to veterinary surgeons, wearing muzzles, and so rendered safe; as it is a well-known fact that a diseased dog will, in nearly every instance, allow those it knows to handle it and put on a muzzle. A leash only is no protection, for the dog can bite and is as dangerous as if not led. Frequently rabid dogs on the leash are brought to veterinary surgeons. It is also perfectly obvious that a collar—no matter how embellished and be-medalled—will no more prevent Rabies, or hinder dogs from biting, than will a linen collar on a man's neck preserve him from Small-pox or Influenza. But we need not stay to notice these ridiculous notions.

4. The imposition of a dog-tax and registration are necessary to limit the number of dogs, and to ensure that every one has an owner, who should be held responsible for any damage it inflicts. From this measure no dog-owner should be exempt.

If an entire country is infected with Rabies, then suppressive measures should be applied to the whole area, uniformly and energetically, until the malady is perfectly extinct. If only a portion of a country is visited by it, then it is questionable whether such measures should be limited to that portion only. If it were possible to keep all the dogs it contains within its

boundaries, then such a step would suffice, if a certain zone around it were established, beyond which no infected animals should pass. But it would be extremely difficult, if not impossible, to establish such a barrier; and to effectively rid a country of Rabies, though only partially infected, the sanitary police measures should be applied to the whole.

That such a result is possible has been proved by the experience of the countries I have named; and from these examples, and what we now know of the disease, it may certainly be affirmed that Rabies need only exist in a country which does not desire to get rid of it. The United Kingdom can quickly and easily free itself from it, and keep itself free if it cares to do so; and a heavy responsibility for the loss of human life rests upon those who oppose, or do not choose to adopt, the measures indicated. Continental nations with co-terminous frontiers should combine in a simultaneous effort to abolish a scourge which creates so much dread, and causes so much suffering and terrible death to man and beast. Such a consummation can be realised; and it only needs the will to effect it.

SUCCESSFUL OPERATION FOR THE CURE OF LARYNGISMUS PARALYTICUS, OR ROARING IN THE HORSE.

BY T. S. BUTLER, V.S., MINNEAPOLIS, U.S.A.

WHILE in Appleton, Wisconsin, last summer on a pleasure trip, I was requested to operate on a horse for the cure of the above-mentioned disease.

The animal was a draught stallion about ten years old, and was almost worthless in his then condition, unless wearing a tracheotomy-tube all the time. He was driven from Oshkosh to Appleton—a distance of twenty miles—to the stock sale to be disposed of.

Three friends of mine (Drs. Kaurtz and Mack and Mr. Johnson) purchased the animal at a small price, for the purpose of having him operated on. He was the worst roarer I ever knew, and could not travel the distance of a block at a slow trot without falling, unless the tube was kept in the trachea.

He was operated on, according to Fleming's method, as laid down in his work on the subject, and at the end of six weeks, when the wound had completely healed, he was put to work on a dray in town, doing his work nicely without roaring. He was then sold and taken to the lumber wood in the northern part of the State, where he worked all winter on a logging sledge, hauling

seven miles to the landing without making the slightest noise and without wearing a tube. Anyone who has witnessed the loads horses are compelled to haul can testify that the work is very hard.

I have been informed by several parties who worked in the same camp, that the horse did his work as well as any of the other horses, without roaring, and still continues sound.

I have operated on seven cases thus far, with the following results: Four complete recoveries, two partial recoveries, and one failure. The best results have been obtained with draught horses.

Several articles have been written in this and some European countries condemning the operation; but while it has not always proved successful in my hands, yet the percentage of recoveries is sufficient to warrant my advising the operation when the animal is worth the expense of the trial.

There is no operation that is always successful, and as this diseased condition renders the animal worthless, the operation should be tried; if not quite successful, it will very seldom leave the animal in a worse condition than he was prior to the attempt.

I should be pleased to hear the results of others on this subject.

EAR VERTIGO IN HORSES—MENIERE'S DISEASE.

BY S. LONGHURST, M.R.C.V.S., A.V.D., 10TH HUSSARS, YORK.

A WEEKLY veterinary contemporary had recently, in a paragraph under the heading of "Megrims, or Menière's Disease," the following fallacious statements, which show that the writer's experience among riding horses must indeed be limited:—

(1) "Always occurring when the animal is in harness; (2) Is always seen when the horse is in harness; (3) Only when in harness."

Now, during last year, three cases of Ear Vertigo in saddle horses and one in a pony have come under my own personal observation. One of these was a charger belonging to an officer, and named by the groom the "daft horse," another belonged to a retired officer living in York, and the third saddle animal was a mare belonging to an officer in my regiment. The pony was sold at a repository here, and returned because of the peculiar symptoms it manifested.

The case of the third saddle horse is a most interesting one, and her owner would consider it a disgrace to put a collar over her head, as she is such an excellent animal in the hunting-field.

She has won steeplechases, and been hunted for two seasons with a well-known pack of foxhounds. When first *hacked* along the road or exercised in the riding-school, at *a walk* or *quiet* trot, she would certainly frighten a stranger riding her; as she suddenly turns round her head (always towards the right flap of the saddle), lays her right ear close back on the neck, champs the bit, appears to be partially delirious, and wheels rapidly round to the off-side, regardless of everything.

One groom who was riding her thought she wanted to tear his right knee; but she is a very good-tempered and docile animal when not suffering from these fits. She is worse when ridden in a snaffle than a double bridle, and a very curious feature in the case is, that when the mare is seized with these alarming symptoms, if the rider immediately dismounts and leads her for a few yards they pass off, but only to return again on her bad days. Giving her plenty of regular exercise, mash diet, and bromide of potassium, keeps her fairly right; but when she is allowed to become a little gross and the medicine is discontinued, then she is as bad as ever. Recently she showed all the symptoms in the stable, when standing quietly in her stall. When so attacked, the groom says she does not seem to know what she is doing, as she blunders against the right side of her stall.

This mare has never had a collar over her head, and is eight years old.

An officer told me a few days ago that he was riding a horse belonging to a lady, which is suddenly seized with the peculiar ear symptoms and then "bolts"; but as the animal always keeps to the road or "negotiates" obstacles, her brain cannot be the seat of disease.

Another officer recently sold at a sale his old first charger (fourteen years old), because of its manifesting the same kind of symptoms. The horse would suddenly drop one ear, turn round about three times, and then fall (not rear) over backwards—always injuring one hock more than the other. On three occasions not long ago, and prior to sale, the horse was brought to me after showing what the old farrier-major called "signs of Canker of the ear."

Some horse-copers are aware of the ear being involved in this strange affection, and swear as to the benefit to be obtained—at least temporarily—from employing chloroform and olive oil on cotton-wool, which is stuffed into the ears of horses showing the special symptoms—thus showing that they know something more of the disease than the writer in the weekly contemporary alluded to.

(There is ample evidence to show that the condition is not "Megrims" as usually known, and that perhaps as many

saddle as harness horses are affected. Its relations with the auditory apparatus are well established, and its identity with Menière's Disease in man, which is not "Megrims," can scarcely be disputed, except by those who have had no experience in it.)

MONSTROSITY IN A COW.—*AMORPHOUS GLOBOSUS.**

BY DR. DUNCAN, ONTARIO VETERINARY COLLEGE, TORONTO.

An excellent specimen of this somewhat rare freak of nature has just been presented to the Museum of the Ontario Veterinary College by E. Edwards, V.S., of Ohio, U.S.A. Mr. Edwards gives the following history of the case:—"This monstrosity was the product of a Holstein cow. She had been put to a full-blooded Holstein bull, and calving was accomplished without assistance. The calf was a male, well developed. But the placenta was retained and, on the third day after calving, I was requested to remove it. On reaching the stable and looking at the animal, I saw, projecting slightly from the vulva, what appeared to be a portion of a second fœtus presenting. I introduced my hand to withdraw it, but found it was held in position by a cord. On following up this cord, I found it to pass through the cervix and to be attached to the placenta. I then evacuated the uterus of its contents, which was accomplished without difficulty. The object which had first attracted my attention was now found to be an almost circular mass, apparently of flesh covered by integument. The integument was covered closely and naturally with hair, partly black and partly white. On one portion the hair was curled somewhat as it is on the forehead of a calf. I have said it was covered with hair, but upon what appears to be the under surface there is a perfectly straight line destitute of hair. I examined the cord carefully. It contained the blood-vessels arranged in the manner usual to those in the umbilical cord. It was firmly implanted both into the montrosity and the placenta. The placenta was apparently single." An examination of the specimen fully confirmed the description given. It measured 5½ inches in diameter, 1½ inches thick, and weighed 13½ ounces. The "hairless line" spoken of was exceedingly well marked, and probably represents the union of the right and left somatapleure—the position of the linea alba. Although it has not been dissected, it may be pronounced to be of the acardiac variety. Lusk says, "The amorphous is an acardia without head or extremities. It is of a rounded form, and its surface, though ordinarily smooth, may present faintly-marked tubercles, which are regarded as rudimentary extre-

* Gurlt's classification *vide* Fleming's Obstetrics.

mities." This specimen, however, showed not a trace of any tubercles or anything to indicate the presence of a head or extremities. Probably this montrosity was developed from a double-yolked ovum, and was produced in the usual way, viz., by reversal of the blood current in the umbilical cord, owing to the strong action of the heart of the fœtus.

BILIARY CALCULI IN THE HORSE.

BY J. A. NUNN, F.R.C.V.S., D.S.O., PRINCIPAL VETERINARY COLLEGE, LAHORE.

THE subject from which a number of Biliary Calculi were obtained, was an aged child's-pony, a mare, that was sent to the Lahore Veterinary College to be destroyed, the owner being about to leave the station, and having no further use for it, and being an old favourite, he did not like it passing into the hands of a native.

The animal was in good condition, and about fourteen years old; it was destroyed for dissection purposes. On examining the abdominal viscera, the whole of the bile duct was found to be closely packed with Calculi of various sizes, their volume varying from that of a walnut to a pin's head. They were collected, weighed, and counted as well as could possibly be done, and discovered to be over sixty in number; and the entire quantity weighed four ounces. Beyond a slight thickening and staining of the walls of the duct, there was nothing to be observed of an abnormal character in the liver, and all the other organs were healthy. During life is was reported that the pony had never suffered in any way.

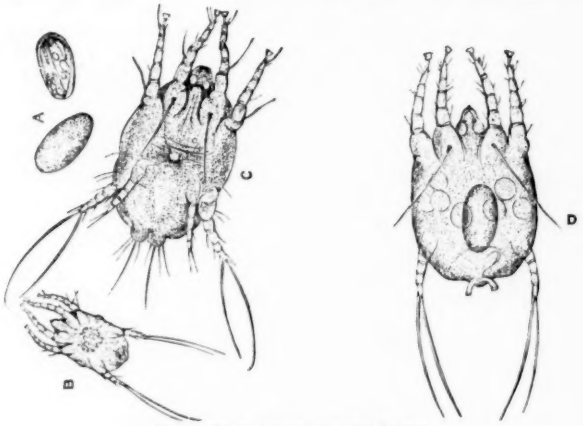
CANKER OF THE EAR IN DOGS, DUE TO A PARASITE.

BY A. J. SEWELL, M.R.C.V.S., LONDON.

ALL those who have had much experience with dogs must have frequently noticed that they occasionally show signs of great irritation in the ear by constantly shaking the head, holding it on one side, and rubbing the side of the face along the ground, and now and then scratching the back of the ear with the hind foot; and yet, in some cases, on casually examining the ear, there is nothing much to be seen to account for these symptoms. A little dried brown excretion may be noticed—in fact, the ears look just slightly dirty. The conclusion often come to is that if the parts were cleaned the irritation would cease, but such is frequently not the case, as I daresay many of your readers have observed; for in

spite of ever so much washing, the dog continues to shake his head, showing that he is still uncomfortable. If, instead of giving a hurried look into the ear in these cases, the parts are well examined and the canal leading into the ear is carefully watched, tiny white specks, oval in shape, and about the size of the eye of an ordinary small sewing needle, will be observed. These are parasites, and are, in my opinion, the cause of that disease called "canker" of the ear.

I do not mean to imply that all diseases affecting the ear, and which are generally all called "canker," are due to this parasite; on the contrary, there are many cases due to an eczematous diathesis, when there is a free discharge, and the bare part of the



PSOROPTES AURICULARIS CANIS.
Magnified about 70 times.
(A) Larval forms. (B) Young Acarus. (C) Male. (D) Female.

internal surface of the flap of the ear is also affected. Then there is another form of the so-called canker characterised by a free, offensive, purulent discharge coming from the lower part of the canal, and which is often due to ulceration of the skin lining the external meatus. Sometimes the ulceration extends to the cartilage, and it may, and does, occasionally extend to the bones under the cartilage, and then the discharge is particularly offensive, and there is great pain. It is quite easy and proper to divide canker of the ear into three distinct and separate diseases, each requiring different treatment. Then there are those disorders affecting the flap of the ear, generally due to injury or eczema, and called "external canker."

However, it is not my intention here to go into details with regard to the several forms of disease affecting the ear, but to confine myself to that particular kind first mentioned, and due to a parasite.

These parasites, which I have called the *Psoroptes Auricularis Canis*, are extremely active in their movements, and, if the ear be carefully watched for a few moments, they may be seen running about the skin, and also along the hairs in the ear, at a fairly rapid rate, considering their minute size; and the irritation which they cause is due in a measure, I believe, to the tickling sensation caused by their movement, and partly the result of their biting.

I have had these parasites under observation for the last twelve months, but it is only just recently that I have been able to get some specimens to examine under the microscope, and these I had drawn by an artist; and I must say, in passing, that he has done justice to his work, for the acari, when seen with the microscope, look exactly like the illustrations given herewith.

In one specimen of the larval form, it will be noticed that the shell or covering has become partly removed, and the legs of the parasite are seen still lying curled round the body. This is exactly how it appeared in the specimen I examined.

B is a young acarus not yet fully grown, and from the number of its legs it is probably a female.

C, a specimen of the male.

There are several distinctive differences between the male and female. In the first place, the former has eight legs, it is smaller, and they are far less numerous, there only being about one male to every twenty females. The female (D) is thicker set, and has only six legs, and in the centre of the trunk is a small oval body which I take to be an egg. In both cases the front legs are provided with suckers, which are somewhat triangular in shape and situated at the point of the toes. In walking, the fore legs are only used, the hind ones not moving, but are dragged along with the body.

The *Psoroptes Auricularis Canis* does not burrow under the epidermis, like the mange parasites, but lives on the surface, to which it attaches itself by its suckers.

To prove this, I kept a number placed under a watch-glass upon my arm for a day, and though they caused slight irritation, and raised small points by biting, they did not attempt to burrow. I also placed a number under a watch-glass upon the body of a hairless dog, and they did not attempt to burrow; but they were very restless, for they could be seen with a strong magnifying glass to be constantly travelling about, which looked, I thought, as if they did not feel at home in their new situation. They did not seem

to have bitten the dog's skin, as after they were removed there were no signs of small blisters or papules; besides, the dog did not seem to take the least notice of them, which would not have been the case if they had punctured the skin, as they did on my arm. Of course, the skin lining the passage into the ear is much thinner and softer, and here, I believe, the mites do bite, and as a result there is an exudation which, I consider, accounts for that brown and somewhat dry discharge so often seen in some ordinary cases of canker.

I have never been able to find the acarus anywhere else about the dog but in the ear—in fact, they do not seem to wander outside the canal and crevices formed by the cartilage, not even upon the flap of the ear, either inside or out. They vary in numbers—sometimes one can only find a few, about twenty; in other cases they are present in hundreds, lying in clusters like a heap of fine white powder. I have also frequently found these same parasites in cats' ears, and in some cases they induce rather extraordinary symptoms, the cat being almost unable to walk; in fact, when it attempts to do so, it rolls about as if intoxicated, frequently falling over on its side. I have never seen the acarus cause the same symptoms in the dog.

The treatment and cure of canker of the ear, when caused by the *Psoroptes Auricularis Canis*, is a very simple matter; for, by applying some agent which will destroy these acari, the irritation at once ceases. I have found the following lotion to answer the purpose admirably in all cases, both in dogs and cats:—

R. Ung. Hydrarg. Nit. ... ... ʒi.
Ol. Amygd. ... ... ʒi.
Well mix.

It should be applied all over the internal surface of the ear daily, with a camel's hair brush, or a few drops may be poured into the ear. After a week the ear should be syringed out with tepid water and methylated spirit, about one to ten.

I have heard it more than once stated by men who have had large experience with dogs, that they believed canker of the ear to be contagious; and no doubt it is, considering that it is due to a parasite which can be easily transferred from one dog's ear to another.

There is a somewhat similar acarus called the *Symbiotes Spathiferus*, which causes a certain form of mange in the horse; but I cannot find that this parasite described in the present article has ever been noticed in the dog's ear, or mentioned before.

(It is interesting to find this ear parasite of the dog and cat in this country. So long ago as 1834, Hering, of Stuttgart, discovered a parasitic ear disease in the dog, the parasite being

named by him the *Sarcoptes Cynotis*. In France, in 1849, the same parasite was found in the ear of a dog, and designated the *Sarcoptes Auricularum*. In 1862, Beudz, of Copenhagen, found it in the same situation, and properly named it *Symbiotes Canis*, as it is really a Symbiot. Shirmer and Zürn afterwards described this parasitic otitis, and, later, Guzzoni, Mégnin, and Nocard have given it particular notice. The parasite gives rise to epileptiform attacks among packs of sporting dogs, and a similar parasite also produces fits in cats. This of the dog has been named the *Symbiotes Auricularum*, variety *Canis*.)

ACUTE DIFFUSE NEPHRITIS (BRIGHT'S DISEASE) IN A MARE.

BY E. WALLIS HOARE, M.R.C V.S., CORK.

THE subject was a well-bred brood mare, aged about ten years, with foal at foot. There was no previous history of disease; she had bred many foals, and had taken the horse about twenty days before. About ten days previous to my attendance, the owner, a medical man, noticed the mare sick in the field, showing signs of dull abdominal pain; the hind limbs were swollen, and the appetite capricious. When brought to the stable she lay down as if attacked by Colic; the pains were intermittent, and sometimes she would stretch at full length. The bowels were constipated, and the urine, although rather darker in colour than normal, and slightly thick, was passed in sufficient quantity. He treated her with antispasmodics to relieve the pain, but the action was only temporary, as a dull pain soon appeared. On the day before I saw her she received a large dose of Ol. Lini and Ol. Ricini, as there was no action of the bowels. On my first visit, on June 6th, I found her lying at full length in the stall. Temperature 101-2°; pulse quick, irregular and weak; respirations accelerated. She had attacks of intermittent pain of a dull character, and would occasionally turn her head to the right side. There had not been any action of the bowels for some time; the urine, which I drew off with the catheter, was scanty, very thick, and slightly dark in colour. She showed no straining of any kind, and got up without any difficulty. There was no tenderness on pressure over the loins, and the swelling had disappeared from the hind limbs. When walked she showed slight weakness of the hind limbs. The appetite was almost completely lost. I prescribed small doses of Spts. Chlorof. and Spts. Aeth. Nit., with stimulants, and small quantities of eggs and gruel if she refused to eat anything. Cloths, wrung out of hot

water, were also applied to the loins, and enemas were administered to relieve the bowels. On my next visit (June 7th) there was a marked improvement; the pain had almost disappeared, and she had commenced to feed a little. She was purging freely, which seemed to give relief. The urine was clearer and more abundant. I left instructions to administer an opiate if there was any return of the pain. On June 8th I found my patient had a return of the pains during the night, and all the former symptoms had returned.

At intervals she would bring the off hind leg around to the mouth, as if attempting to bite it. She would remain in this position for about a minute, and then lie down very carefully and stretch out at full length. On getting up she would rest for a moment on the haunches, and when up would exhibit an anxious expression of countenance. There was no acute pain manifested, and at intervals she would turn her head to the right side. The pulse was very weak and irregular. The bowels were acting slowly, but there was no straining. The urine was passed at long intervals, but, beyond being rather thick in appearance, did not present anything abnormal. The temperature was 102°, and this was kept up with slight deviations during the whole course of the disease. Small doses of Tr. Digitalis and Tr. Belladonnæ were prescribed, and Tr. Opii. and Spts. Chlorof. if the pain became severe. On June 9th there was a slight improvement, but this did not last long, and from the 10th to June 19th she became gradually worse and died on the night of the 19th. The urine from the 10th became more scanty, and was dark red in colour. On the 16th I noticed two large clots of blood passed with the urine, and also small amounts of arterial blood. The animal would assume various positions, a favourite one being to rest on the sternum, and stretch out the fore limbs and rest them on the toes. The hind limbs became very much swollen, and dropsical swellings appeared under the breast and on the fore-arms. The lower part of the face and nose also became swollen. The stomach seemed very irritable, and great pain was shown after any food was taken, also eructations of gas were frequent. There was a distinct uraemic odour from the skin.

The surface of the skin on various parts of the body was very irritable, and the animal would attempt to scratch or bite any parts within reach. A sample of the urine was forwarded to Professor Williams, New Veterinary College, Edinburgh, who kindly examined it and reported as follows:—"Casts of uriniferous tubes very much broken down; fat in considerable quantity, and blood corpuscles very much altered and with their contents washed out. The urine is also albuminous." On June 20th, I

made a careful *post-mortem* examination, but on account of the excessive heat of the weather at the time, decomposition had already commenced. The heart showed signs of fatty degeneration, there was a slight amount of pericarditis, and also a moderate amount of fluid in the pleural cavity. The digestive organs contained only a small amount of liquid food. The bladder was empty, but, beyond a few spots of ecchymosis, did not present any lesion. The kidneys were enlarged. I forwarded both kidneys to Professor Williams, but they arrived in too decomposed a condition to render a microscopical examination possible. He, however, stated that they showed all the appearances of Nephritis. The above case presents a train of symptoms which, without an examination of the urine, a positive diagnosis would be difficult to give. The urine on some days at the commencement would appear to be sufficient in quantity, and did not present anything peculiar in appearance. The sudden changes in its character, and the peculiar positions which the animal would assume, are also obscure symptoms which would not tend to lead to a positive diagnosis. In this case there was no history of the cause of the disease, no attack of Influenza or other affection preceding it.

CHRONIC STRICTURE OF INTESTINE, AND ACUTE GASTRITIS.

BY W. S. ADAMS, M.R.C.V.S., A.V.D., REMOUNT DEPOT, HOSSIR, INDIA.

A CHESTNUT gelding, five years old, was reported to have shown pain at about 3 a.m., and to have lain down, refusing to get up. He died in his stall at about 4 a.m., manifesting symptoms of acute abdominal pain. I made a *post-mortem* examination at 6 a.m., and found the cause of death to be Acute Gastritis, dependent on a Chronic Stricture in the duodenum, about six inches from the pyloric extremity of the stomach. The stomach was engorged with food which was hard and dry, the lining membrane of the organ was intensely inflamed, as was also that of the intestine anterior to the Stricture. Other portions of the intestines were healthy, and the ingesta they contained was well digested. The liver was of great size, weighing 22lbs., the spleen also was much enlarged, weight 10lbs.; both kidneys were of unusual size, each weighing over 3lbs. The Stricture in the intestine was evidently of some standing, and must at some time have been either directly or indirectly the cause of death. This horse was received in poor condition, and did not improve as did the others of the same batch, but at no time did he show any symptoms of special disease, nor had he been the subject of Colic. It is extraordinary that such

acute disease of the stomach should have occurred without earlier indications of ill health. The horse ate the whole of his evening feed, also his ration of forage, which was found in the stomach almost in the same condition as when taken in. This engorgement with food was doubtless the immediate cause of the Gastritis, whilst the Stricture of the Intestine was the indirect cause, the free passage of ingesta from the stomach being arrested.

RABIES AFFECTING A HORSE.

BY F. B. DRAGE, M.R.C.V.S., JUBBULPORE, INDIA.

On 30th June, about 3.30 p.m., I was called by the farrier of 1st Bengal Cavalry to see a horse reported to have suddenly turned wild. Before giving the symptoms of the case, I must state that some twenty-four days previous, a wild animal, believed by some people to be a panther and by others a wolf, had been attacking and biting people in this station in the night. The nights at that time being very dark, no one was able to clearly make out what kind of animal it was; but from marks I have since seen on one horse's side, evidently inflicted by its claws, and from marks seen on the ground, I think it must have been of the cat species, and in all probability a panther, of which there are a good number round about Jubbulpore. On the night of the 6th June, this animal came into the native cavalry sick lines, bit one horse very slightly on the nose, and another (a first charger) on the near side, and the farrier was also bitten very badly on the wrist; it then left the sick lines and attacked some men on sentry duty.

On reaching the lines, I found the horse that had been bitten on the nose perfectly mad.

Symptoms.—Respirations about fifty, profuse sweating, excessive twitching of the muscles, especially those of the hind quarters; nostrils widely dilated, a peculiar staring and wild expression about the eyes; continually opening and shutting the mouth; no salivation; at intervals of two or three minutes, the horse would throw itself down, and bite and shake its leg almost like a dog with a rat; in about one minute the horse would stagger to its feet, and stand perfectly quiet watching every movement round it. At one time its rug came off, whereupon it threw itself again on the ground and began savagely to bite and tear it. On water being given, the horse greedily drank about four pints, and seemed greatly relieved for a few minutes, when all the symptoms again returned in an exaggerated form. I was, of course, unable to take the temperature or pulse, the horse being far too dangerous to approach. The most intense

frenzy came over him at the sight of a dog that had followed me down to the lines.

From the history obtained, and symptoms, I at once diagnosed the case as Rabies, and had the horse immediately destroyed. The animal was a four-year-old grey, country-bred, and was stated to be of a very quiet temperament; the day before, he had been doing orderly duty for about two hours, and I was told by the orderly who rode him that he had never carried him better.

I am sorry to say I was unable to make a *post-mortem* examination the same evening; but early on the following morning I carefully examined the "brain, spinal cord, and viscera," all of which to me seemed perfectly normal, with the exception of the brain. Here I thought the choroid plexus in the left lateral ventricle very much enlarged, it being as thick as one's little finger; also I noticed ecchymosis and extravasated blood-spots in the white matter of the brain.

I must mention that I did not examine the lungs or heart, the horse being shot in the chest with a view to saving the brain.

I have always thought excessive salivation was one of the symptoms of Rabies; in this case the horse's mouth was peculiarly dry, and the mucous membrane of a livid and bloodless yellow colour.

The period of incubation was twenty-four days.

It will be interesting to watch the other horse; the case reported was the first bitten; both bites were very slight, especially the one upon the horse destroyed.

After biting the two horses and three men, nothing more was seen of the animal until the next night, when it again attacked one native, and on the following night two more men were bitten near the city of Jubbulpore. Since then nothing has been seen or heard of it, so in all probability it has died long before now.

EMPROSTHOTONOS IN THE HORSE.

BY ILES MATTHEWS, F.R.C.V.S., F.R.G.S., ROYAL HORSE GUARDS.

THIS form of Tetanus is so rare amongst horses that the author of one of our standard works doubts its existence. I therefore think the following clearly-defined case worthy of record.

While on duty at the Royal Military Tournament I was summoned, towards the end of the evening display on June 3rd, to a horse ridden by one of the Australian Contingent, said to be "Bunched up, refusing food, and reluctant to move." I found the animal with its head depressed and back arched, with slight elevation of the tail. Jaws nearly rigid. It had gradually become

"stiff" after the last performance. Cervical—including levator humeri—dorsal and lumbar groups of muscles were very rigid. Ears erect, but an entire absence of spasm in retractors of the eyes, with the resulting protrusion of Cartilago nictitam, so diagnostic of the opisthotonic form of the disease.

Being late in the evening and the hall rapidly emptying, I determined to leave the animal there all night, placing it in a secluded box set apart in case of accidents. Examination showed a recently cicatrised wound in off-hind foot, caused by picking up a nail. The horn around this was well thinned, thus relieving all pressure, and an opiated linseed poultice applied. Sedatives were smeared on gums, and arrangements made for removal of the animal in a horse-float early next morning to the infirmary of my regiment at St. John's Wood.

On its arrival, Ol. Lini oj., Tinct. Opii. ʒij. were administered with considerable difficulty. Opiated enemas were also given. The patient constantly sucked linseed tea and gruel.

June 4th, Spasms of muscles intensified, spine and neck being more completely arched. Masseter muscles very rigid. Pulse, 40; temp., 99°. Usual precautions being taken to ensure repose.

June 5th, Spasms somewhat relaxed. Pulse, 40; temp., 99°.

June 6th, temp., 100° ; pulse, 36. Jaws very firmly locked. Put Ext. Belladonna on teeth at each visit.

June 7th, temp., $100\frac{1}{5}$° ; pulse, 36. Trying to eat. Gave Ol. Lini oj., Tinct. Opii ʒj., Potass Iodid. ʒj.

June 8th, pulse and temperature unchanged. Exacerbation of spasms appears in the afternoon, subsiding somewhat towards evening.

June 9th, muscles slightly relaxed.

June 10th, no change.

June 11th, temp., 100° ; pulse, 36. Place in slings, in view of crisis, which may be expected to-morrow or next day.

June 12th, considerably excited by slings. Pulse, 56; temp., $100\frac{1}{5}$°. Repeat Ol. Lini and Tinct. Opii.

June 13th, pulse, 40. Spasm of Retractor oculi manifested for the first time.

June 14th, Spasms of muscular system more relaxed generally. Eats a considerable quantity of fresh grass.

June 15th, improving. Give Mag. Sulph. ʒiij., Aqua oj.

June 20th, cervical muscles much softer. Jaws more relaxed.

June 25th, give Calomel ʒj., Aloes ʒij., Ginger ʒij. F.B. Remove from slings a few hours each day.

June 28th, steadily improving.

July 15th, lumbar and tail muscles are the only ones still hard.

July 30th, free from muscular spasm. Put on shoe.

August 4th, on my return from the cavalry manœuvres in Surrey, I found the animal completely restored to health, and arrangements are being made for it to rejoin its regiment—the 14th Hussars—from which it was lent to the Australians. It is a noteworthy fact, that this was the only case of sickness that occurred amongst the 400 horses that took part in the various displays.

A CASE OF DIAPHRAGMATIC HERNIA, WITH STRANGULATION OF A PORTION OF THE SMALL COLON.

BY CHARLES SHEATHER, F.R.C.V.S., LONDON.

A young, well-bred, high-couraged bay gelding, used as a leader, was driven a short time on the morning of Friday, August 7th, and subsequently was taken to Hampton Court and back in the evening. On arrival at the stable he appeared to have a slight attack of Colic, the symptoms being of a common type, and not of a violent nature. The owner applied some remedies, and at intervals the animal seemed free from pain, alternated with somewhat acute suffering. This state of affairs continued until 1 p.m. on Saturday, August 8th, when my assistant, Mr. W. Pye, was summoned to attend him. He found him standing, frequently looking at his flanks, with a pulse of 60 and a temperature of $100\frac{2}{5}°$, the visible mucous membranes slightly injected, and respiration rather accelerated. Urine had been passed in an ordinary manner, but the bowels had not acted since the attack commenced; the rectum was empty and distended.

At 6 p.m. there was but little variation in his condition, but he had had in the interval one attack of violent pain, exhibited by rapid movement round his box, pawing and striking with his feet, turning with his nose to his flanks, and a hurried respiration.

At midnight his pulse was 72, and small but regular; temperature, 102°; the mucous membranes were more injected, while he still gave evidence of pain by looking back at his near flank.

On Sunday, August 9th, at 7 a.m., his pulse was 84, weak but regular; temperature, 104°; the mucous membranes deep red, and his respiration very accelerated. He had remained standing in one position all night, and bore a very depressed yet anxious expression. At 1 p.m. he stood in the same spot, with his forelimbs advanced, the muscles of the shoulders in a state of vibra-

tion, large patches of sweat about his body, an accelerated and apparently painful respiration, and the greatest possible disinclination to move; occasionally he would emit a short grunt, and reel slightly sideways. His nose would be held about a foot from the ground as a rule, but at intervals he would raise his head, arch his neck and bring his chin quickly towards his sternum, and once this movement was followed by a gush of sour-smelling fluid from his nostrils while I was observing him; the mucous membranes were a hæmogeneous deep red, the mouth dry and the tongue brown on its dorsum surface. It was reported that the symptoms of vomition had been noticeable for about an hour, but only once previously had there been actual expulsion of matter, and then it was sour-smelling, brownish-green fluid. His pulse was 96, almost imperceptible; the temperature had reached 105°.

An exploration of the rectum revealed nothing in the form of fæcal matter, but that the viscus was dilated, dry, and at the extreme limit of reach, contracted suddenly in its lumen. On withdrawing the arm it was noticed to have distributed over it a quantity of dark-red gelatinous-looking matter, evidently blood-stained mucus, but there was no evidence of direct or free hæmorrhage.

The hopeless nature of the case was at once apparent, but it was not so easy to arrive at a correct diagnosis, for while vomition pointed to a lesion in connection with the more anterior portion of the digestive tube, the blood-stained mucus from the rectum testified to the existence of some serious condition of the posterior bowel. He died, after reeling about for some few minutes, about 5 p.m.

The *post-mortem* examination revealed a rent in the tendinous portion of the diaphragm to the upper and left part of the tendinous centre, and a loop of the small colon, three feet long (with its meso-colon intact), but quite gangrenous through the opening. The stomach was dilated with semi-fluid contents, the condition of fluidity being somewhat remarkable.

A previous case of Diaphragmatic Hernia which came under my observation was of a more ordinary nature. The situation of the rent was about the same, but almost the whole of the small intestines had gone into the thorax, and the abdomen was diminished to such a degree as to enable a diagnosis to be made; in this case, the respiration simulated that of a sheep at a show, while the attitude was constantly a standing one with trembling and partial sweats present from the onset. There was great anxiety, and in the early part of the case, which lasted 30 hours, rapid movement round the box, but no extension of forelimbs when at rest.

Editorial.

THE INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

The Congress which recently sat for a week in London discussing serious matters in connection with public health marks an epoch in the history of the veterinary profession in this country, because of the share it took in the deliberations of at least one section in one of the most brilliant of international congresses of the century. It was the first opportunity it has had of showing the intimate connection that exists between human and animal medicine, so far as the prevention of disease in mankind is concerned; and as a medical contemporary remarks, the relation of diseases affecting the human subject to maladies in the lower animals was for the first time fully brought before an international gathering of experts in human and in veterinary medicine. "Indeed," it goes on to say, "the joint action of those two branches of medicine augurs well for future united research in subjects affecting man and the lower animals, as to which much more light is needed than we at present possess." So well did the representatives of veterinary science co-operate with members of the sister branch in discussing most important questions of medicine and hygiene, that the proceedings of Section III. were of a most interesting and attractive character, and drew large and attentive audiences every day; and so valuable was the association that from more than one influential quarter the intention was expressed of having it as a feature in all future congresses on hygiene and demography.

Certainly the veterinary profession was well represented in its foreign element, for amongst those who were sent as delegates from their respective countries, or who sacrificed their own time and money to promote the cause of sanitation and science, were those whose names are familiar as household words in the records of medicine. Chauveau, Arloing, Nocard, Perroncito, Salmon, Railliet, Trasbot, Ivanov, Ménard, Ostertag are names to conjure with at any time and anywhere, and we were fortunate in having them with us in this our advent in assisting to discuss social questions of the gravest kind; for while their scientific position commanded homage and respect, it could not but impress those—and they were many—who imagined that veterinary medicine occupies a very humble position and has few disciples of any merit. The visit of our foreign colleagues will surely be productive of good in many respects, to ourselves their presence was most welcome and cheering; and perhaps when they left this country to return to their homes, they took with them a better and a more appreciative notion of this insular country and the position of veterinary medicine in it than they before possessed. At any rate, their allusions

to both were graceful, complimentary, and encouraging; and their reception must have rather astonished them, for the hospitality and attention bestowed upon them could scarcely have been surpassed.

The organisation of the Congress was not so complete as similar gatherings we have attended, and especially the international veterinary congresses. Very few of the papers read were printed and distributed before the meeting, and this was felt to be a great drawback in discussing them; as it is almost impossible to seize on the salient points of a subject on hearing it read for the first time in French or German. But, on the whole, the Congress must be pronounced a success, whether in point of numbers of attendants or in variety and interest of the subjects dealt with, and from the Queen and Prince of Wales downwards, all connected with it did their best to make it worthy of our great country. The veterinary profession was undoubtedly on its mettle to aid in the good work, and we have reason to think that its effort was highly appreciated.

PROCEEDINGS OF THE INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

SECTION III. of this Congress, to which was allotted the discussion of the Relation of Diseases of Animals to those of Man, began its proceedings on August 11th, Sir Nigel Kingscote, K.C.B., President, in the chair, supported by two Vice-presidents for the day—Professor Perroncito and J. D. Lambert, C.B. In opening the business

The PRESIDENT said: My first duty, in taking the chair of this very important and interesting Section of the first meeting of the International Congress of Hygiene held in the United Kingdom is to offer you all, on behalf of the Organising Committee and the Council of the Section, a cordial welcome to our meetings, and to express to you our sincere thanks for your presence and co-operation in the work that is before us. The subjects that we shall have to discuss are of the greatest and most immediate importance to all classes of the community in every country; and I think myself happy in having been honoured with the presidency of the first assemblage of medical men, veterinarians and agriculturists that have ever met on common ground to discuss questions of the profoundest interest to them all, and to the world at large.

The title of our Section is sufficiently indicative of its scope and object. The relations of the diseases of animals to those of man have been the subject of more or less vague speculation by observers from an early period of the world's history; but it is only of late years that such relations have been systematically and scientifically studied. It would be in the highest degree inappropriate for me—who owe my position here to the accident of being somewhat intimately associated with the business management of two important institutions, which devote much of their energies to the study of animal life and animal diseases—to attempt to summarise the stages of development of this great question, or to pass in review the various diseases which have been shown to be intercommunicable between men and animals. As to some of these—as, for instance, Rabies and Anthrax—the evidence appears absolutely conclusive. A few others are, perhaps, still within the range of speculation, or at least can hardly claim to have been proved to demonstration. On all these diseases and disorders, and the consequences which they involve, we are fortunate in having some of the highest living authorities here to instruct

us, and I shall not abuse your good nature by standing between you and the study of their researches and experience.

There can be no doubt that the anatomical and physiological relations between the lower animals and the human being are sufficiently close to justify the presumption that they are liable to the same class of diseases; and one important part of the subject which will be considered during the meetings of our Section is the question of susceptibility, without which it would seem that the individual ceases to be responsive to the attack of the malignant virus.

In short, as will probably appear in a very prominent form in the discussion of the papers on parasitic diseases, the whole question seems to resolve itself into the survival of the fittest, and it must be for this Congress to consider and discuss the best ways of combating the invasions of the human body by the many varieties of self-multiplying alien germs and external morbific influences which prevent the individual life from completing its normal course.

THE PREVENTION OF HYDROPHOBIA.

Dr. E. FOUX (Paris) then delivered an address on the Prevention of Hydrophobia after Infection by the bite of a rabid animal, and gave an account of the results obained at the Pasteur Institute.

Dr. GEORGE FLEMING, C.B., F.R.C.V.S. read a paper on the

PROPAGATION AND PREVENTION OF RABIES.*

At the conclusion of the paper, Dr. HIME, Bradford, said most who had studied Pasteur's method were convinced of its truth, and the fact that it was established on a scientific basis was absolutely certain; failure might occasionally occur, for in physiological processes there is not the absolute certainty which may be looked for in dealing with physical facts. As an Englishman, and one of many of his fellow countrymen who had availed themselves of the Pasteur treatment, he wished to give expression to the pleasure he had experienced in listening to Dr. Roux. With regard to Mr. Fleming's paper, he thought the collar with the name and address of owner was useful in affording certain means of tracing the disease. Muzzling as carried out in England was often a perfect farce. In York, the dogs on one side of the street were muzzled, while on the other side, which happened to be in another district, they are unmuzzled. Of course, it is impossible to prevent the mingling of these dogs and the disease may easily be spread, especially as an animal affected with the disease has a tendency to ramble. In the opinion of the speaker there would not be much improvement till there was a change in the law which allowed a dog its first bite. When a dog inflicts an injury on a human being the owner should be liable to prosecution. Dogs were not the only animals who spread the disease. Wolves, it was well known, often did so, and in his own experience 11 cases were traced to the bite of a cat. He was not aware in the case of Australian dogs of any evidence which proved that they were susceptible. Two and a half years ago a dog of his own was inoculated with the strongest rabic virus under the dura mater, and was then put through a course of treatment with the same material and in the same way as human beings. That dog was still alive and had never had a symptom, while every other animal similarly infected and not treated had died.

Dr. CHARLES DRYSDALE (London) said he wished to express his thanks to Messieurs Roux and Fleming for their interesting papers. He had had the pleasure of seeing inoculations performed at the Pasteur Institute, and never were experiments made with greater care. The way the spinal cord was prepared, the patients treated, and the observations made had caused him to

* This is the first article in the present number of the Journal.

be ever since an ardent admirer of the accuracy of the French method. Though we in England objected to the establishment of a Pasteur institute, we did not hesitate to take advantage of the method and send our patients abroad. As to the success of the method, when he found 92 per cent. of the most severe cases were so, it seemed to him carrying scepticism too far any longer to doubt, and it was a disgrace to us that we had not in the metropolis an institution similar to that existing in Paris. On the question of the prevention of Rabies all must agree that it would be better not to have the disease to treat at all, and there is no reason why we should. All dogs in the island should be muzzled for a year. Then when we had got rid of the disease aided by our geographical position, it would be easy to prevent its re-introduction. The muzzling should, however, be universal muzzling in the island, not in London and Leeds, and so on, leaving the intermediate towns and places without protection.

Dr. REDFERN (Belfast) wished to emphasise the horrible nature of the disease. Very few diseases which are absolutely fatal in a short time produce so much suffering which cannot be allayed. When the disease exists it alwas goes on to a fatal termination. Though there is no doubt of the value and success of Pasteur's treatment in preventing the horrors of hydrophobia after a person has been bitten by a rabid animal, as Mr. Fleming suggests, there is no reason why any one should be bitten, and with all deference, the suggestion was made to the Council to draw up a resolution, or, in some other form, give expression to the feeling of the meeting, that action should at once be taken by the legislature.

Sir HENRY SIMPSON (Windsor) said: No doubt we shall all agree with Dr. Fleming that muzzling is an effective remedy, but I wish to call attention to the practical carrying out of a muzzling order, and to warn this Section if they make a recommendation to the legislature to endeavour to make exemptions, they are likely to recommend in vain. I would say exempt sporting dogs, because for seven or eight months in the year these are being used for hunting, etc. Hunting and sporting generally leads to the employment of many persons and the expenditure of a considerable amount of money. If you ask men of wealth to sacrifice their hunting for a couple of years they will not do it, and the country would not sanction a measure which would result in such a loss of revenue to the whole of the country. Considering that sporting dogs are well cared for, and that the owners are lovers of dogs, it would appear that they need not be muzzled, but that it should become a condition that they should be kept in charge by competent persons, and that any deviation from health should at once be noted, and an inspection made by a properly qualified veterinary surgeon, and, if necessary, the animal kept in quarantine.

Dr. ELIZABETH BLACKWELL said: I beg to say that in the discussion between muzzles and Pasteur institutes there is one thing that appears to have been forgotten. Two years ago I visited the Paris Institute. I went to see the dogs that had been made mad to produce the virus for the inoculation, and saw several in various stages suffering extreme agonies, and I wish to point out that the establishment of a Pasteur institute involves the constant producing of madness in dogs, and in a Christian country there ought to be no question in preferring muzzling as a preventative of the disease.

Dr. ROUX, as the head of the Paris Institute, officially stated that dogs were not, and had never been, used in the production of the virus for inoculation, and that rabbits alone were used.

Professor OSTERTAG (Berlin) said: I am exceedingly sorry that my knowledge of the English language does not allow me to follow the discussion so closely as I should like, but I have been able to gather that a large part of the discussion has been directed for and against the compulsory use of the muzzle.

It has been objected that a muzzle is ineffective, because cats and wolves carry the disease as well as dogs. But that cases of this sort are rare is proved by the experience of Germany. Since the passage of the law regulating the contagious diseases of animals, Rabies has become a rare disease, and only occurs along the French and German borders. These laws provide that all mad dogs, and those suspected of madness, or even of having been bitten, are to be killed, and all dogs and cats within a radius of fifteen miles must be kept in confinement for three months. In Berlin all dogs wear muzzles, and a case of hydrophobia has not been reported for ten years. As a result of these laws a Pasteur institute in Germany is unnecessary.

Dr. NOCARD (Paris) said: You have just applauded the interesting remarks coming from Roux and Bardach, giving the magnificent results of the Pasteur treatment for Rabies after bites. I wish to speak of the prophylactic treatment, as applicable to domesticated animals. Your distinguished colleague, M. Galtier, announced some time ago that the injection of rabid virus into the veins of sheep and goats does not give Rabies; but, on the contrary, it confers immunity. With M. Roux we have shown that the facts announced are true, not only from rabid saliva, but also from the nervous matter that one obtains from Rabies of both forms. We have been able to preserve from Rabies sheep, which had twenty-four hours previously had intra-ocular inoculation performed; quite recently we have made experiments, not yet published, proving, first, that injection into the veins of rabid virus does not give Rabies to the horse family; second, if the quantity has been sufficient the animals inoculated have acquired immunity against Rabies; third, it is possible to preserve animals which have had intra-ocular injection performed twenty-four hours previously by injecting into the veins on different occasions with different quantities of rabid matter diluted with the Rabies (dumb form), preferably on the question of prophylaxis of Canine Rabies. In principle I am entirely in accord with Professor Fleming; it is incontestable that when muzzling is rigorously applied Rabies rapidly diminishes, but it is clear that the result is only indirectly due to the muzzle. Never has the muzzle hindered a rabid dog from biting. When one has seen a rabid dog break his teeth and even jaws on the bars of his cage, one understands that the dog would not retain one minute any muzzle that one may have been able to place upon him before the disease broke out. But the muzzle has the advantage of showing clearly to the police the dogs which have escaped from the house, or have no home, or who are not the objects of supervision. It is from this class that most rabid dogs are furnished. To seize and take them is to suppress the disease. One would get at the same result by ordering that every dog in the public street should be held in leash. This is what was done in Paris in 1888: 125 mad dogs were observed in the month of April. The Prefect of Police obtained an order as above. The measure was only applied six weeks, yet it sufficed to reduce from 125 to 25 the monthly number of mad dogs for the last half of the year 1888. There is no necessity for new measures to suppress Rabies. It suffices to have the will, and to apply rigorously the measures prescribed in all civilised countries.

Professor PERRONCITO indicated that in the municipality of Turin they had a laboratory for the Pasteur antirabic treatment that gave exceedingly good results, as published by the director, and he also mentioned that an experimental inquiry upon the same method of treatment had been commenced in connection with such animals as oxen, horses, etc., with most encouraging results.

Professor BROWN (London) said that he agreed with every word stated by Roux and Fleming, and if effect could be given to our knowledge by efficient legislation, every one in his department would be only too pleased. But the

carrying out of such legislation was extremely difficult. No Government could force such a measure. The matter lies in the hands of the public, and it would only be when public opinion was ripe for it that restrictions could be enforced by the law. It was a strange fact that the owner can never realise that his dog can become rabid. Restrictions which apply to others may be extolled, but you must not shut up the healthy animal of which he is the possessor; it is here the difficulty lies.

Demonstration of Animal Parasites.

Professor Brown gave a demonstration of animal parasites, first treating the subject generally, and taking up the questions of symbiosis, mutualism, commensualism, and parasitism. That the subject was not quite as simple as might at first sight appear was evidenced when he stated that Van Beneden had described no fewer than 400 species of strongules. He then gave a demonstration of the developmental stages of certain of the fluke or trematodes, and of the cystic worms or cestodes.

Actinomycosis.

Professor Perroncito, after mentioning some cases of direct infection of the skin with Actinomycosis, said that he should reserve the greater part of what he had to say until Friday.

Parasites Transmissible from Animals to Man.

Professor Railliet (Alfort) observed that the parasites transmissible from animals to man were either vegetable or animal. The vegetable parasites included besides the bacteriaciæ or microbes and divers saprophytes that were only accidentally parasitic, the fungi (*tricophyta*) which caused the several affections designated by the name of "tinea." The animal parasites might be divided into external and internal parasites.

Of the internal parasites some were common to man and animals, or, living more especially in animals, might develop accidentally in man; they were often transmitted indirectly, while others must necessarily penetrate into the human organism in order to complete their evolution, and hence their transmission was always direct (*Tænia solium, Tænia saginata*).

Indirect transmission took place very generally through the medium of drink or food, polluted or infected by the deposition of ova or embryos.

Direct transmission was brought about by the consumption of the flesh of infected animals. In this case the parasites living in the larval state in animals attained their complete development in man (*Tænia solium, Tænia saginata, Bothrio cephalus latus, Trichina spiralis*).

Prophylaxis must be regulated by the indications furnished by the preceding data: 1. So far as concerned external parasites, man ought, as far as possible, to avoid contact with animals suffering from parasitic affections transmissible to his species; he ought to endeavour to destroy the parasites and their progeny, not only in those animals themselves but also in all spots which might have been infected. 2. Since internal parasites were introduced generally through the medium of food or drink, it was expedient only to consume these substances after a careful examination and after having purified them, where necessary, by boiling, filtration, or other means. 3. Certain sanitary measures might contribute effectively to the completion of the protection.

Trichinosis in the Netherlands.

Dr. B. Carsten said that the first trace of Trichinosis in the Netherlands was discovered in 1883, at Jerseke, a village near Goes, in South Beveland, one of the islands forming the province of Zeeland, whence, by means of the

pigs kept at and the rats infesting a tannery and storage for offal, the disease spread till 140 persons in seven different parishes on the island were affected, one succumbing. The disease, which threatened to become enzootic in this district, was stamped out, thanks to the energetic measures adopted. A royal decree was issued prohibiting the removal of pigs and pig manure from an infected district, and a special veterinary inspector was stationed temporarily in the neighbourhood as supervisor; the local authorities instituted a strict search for Trichinæ, ordering that all pork before consumption should be submitted for inspection to a competent committee appointed for that purpose, that all pig yards should be overhauled, and that whenever any trace of Trichinæ was found the infected swine and all vermin found in the neighbourhood thereof should be killed and, together with the offal, consumed by fire. The only other appearances of Trichinosis in the Netherlands were in 1888, at Leyden and Noordwyk, two places in close proximity in the province of South Holland, where prompt action stopped its spread. Since 1889 there had been no return of the disease in the Netherlands. In March, 1888, Trichinosis was included among infectious cattle diseases, and consequently all infected pork became liable to seizure and destruction by order of the local veterinary official. That Trichinosis was now a thing of the past in the Netherlands was due to the thorough organisation and the persistent enforcement of precautionary measures.

August 12th.

The PRESIDENT was in the chair, with Drs. CHAUVEAU and BUCHANAN as Vice-presidents.

FOOD POISONING.

A paper by Dr. BALLARD was read on Meat Infection and Food Poisoning, the conclusions of which showed that the precautionary measures against such food poisonings consisted mainly in (*a*) thorough cooking; (*b*) the most scrupulous cleanliness and ventilation of places where cooked food was stored, or where pork or other flesh-meat was salted or dried or otherwise prepared, with the adoption of every possible precautions against the rise into these places of ground air, or the introduction into them of morbific or unwholesome emanations.

Mr. VICTOR C. VAUGHAN (Minnesota) discussed the infection of meat and milk under the following heads:—(1) The infection might be due to disease of the animal from which the food was obtained; (2) to inoculation of the foods with specific pathogenic microbes outside the body of the animal from which the food was derived; (3) meat and milk (especially the latter) were often affected with saprophytic toxicogenic bacteria. He referred to the observations of Gärtner, of Jena, on the epidemic which followed the eating of meat from a cow which died of Diarrhœa, and likewise alluded to other similar instances of food poisoning. The disease known in Japan as Kakké, and said to be identical with Beri-beri, was prevalent at Tokio from May to October every year, and was due, according to Miura, to an intoxication from a fish. With regard to the transmission of Tuberculosis from bovine animals to man by the ingestion of flesh or milk, he would be willing to endorse the following propositions:—(*a*) That the flesh of tuberculous cows, even when the disease was localised in the lungs, should not be eaten by human beings; (*b*) when the Tuberculosis was general there was danger of specific infection through eating of flesh or drinking of milk; and (*c*) that when there was Tuberculosis of the udders the specific infectivity might be transmitted through the milk. Koch thought the milk contained the bacillus only when the milk glands were affected, while Böllinger and others found the milk infected even when the disease was confined to the lungs. He held that the

observations of Power and Klein on the Hendon cows showed the necessity of careful veterinary inspection of all dairies. The frequency with which Typhoid, Diptheria, and other infectious diseases were disseminated by the use of milk infected from without was shown in the current records of medical literature. He exhibited a micro-organism which he had isolated from the milk and the well water of a dairy, the clients of which had suffered from Typhoid Fever, and he had also isolated the chemical poison produced by the germ. He directed his remarks more especially to the infection of meat and milk with saprophytic toxigenic germs, to which, he said, too little attention had been paid. The poisons found in meat and milk were either the ptomaines produced in foods as a result of the activity of saprophytic bacteria, and might properly be called putrefactive alkaloids or the poisonous bacterial proteids, the latter being most frequently present. We knew now of the existence of a poisonous base and of poisonous proteids in cheese. The poisons were due to a variety of germs, and the chemical nature of the products varied not only with the kind of germ, but with the stage of putrefaction. To prevent this poisoning of cheese, to the dairies should be attached a bacteriologist who should thoroughly acquaint himself with the germs and moulds which were necessary to proper fermentation and ripening of cheese, and pure cultures of these should be added to the milk, all other organisms being excluded. A great deal of infant mortality was due to the workings of saprophytic organisms producing Diarrhœa. To prevent this, sterilisation of milk had been recommended, but it had not given good results, because it was difficult of application; there was no evidence that the chemical poison was destroyed, and the food often re-infected in the infant's alimentary canal.

Dr. BLANCHARD (Paris) desired to say a few words about the poisonous effects following the ingestion of the flesh of the higher animals. These intoxications have been called "botulism" (Lat., *botulus*, a sausage), and included poisoning by all kinds of meat. As was now well known, putrefaction of meat was due to microbes which had invaded it, and which produced chemical substances, the majority of which were eminently toxic. Though this was the most common cause of meat poisoning, yet all cases could not be explained in this manner. There existed, indeed, a large number of animals whose flesh was normally toxic, independent of any putrefaction or morbid state. He referred to eels, from whose blood Mosso had isolated a venomous substance—ichthyo-toxine, and he alluded also to the intoxications produced by different fish in the sea of Antilles (Meletta venomosa) and in the sea of Japan (Diodon, Tetrodon). In the meletta the principal poison resided in the muscles, while in the Japanese fish it was seated exclusively in the genital glands; the intoxication here was due to ingestion of leucomaines. "Botulism" should be reserved for cases of intoxication by meat invaded by microbes, while the term "signatere" was the name given by the Spanish doctors to the intoxication by fresh meat free from microbes, but charged with leucomaines. Under botulism would be also included the intoxications produced by ingestion of the flesh of animals seized with infectious maladies, and whose tissues were consequently charged either with ptomaines elaborated by the pathogenic microbes, or with leucomaines produced by the organs working faultily through disease.

Professor BROWN said that it was quite clear that there were microbes having no special morphological stock which might undergo various changes under cultivation, and which produced unanticipated effects. The bacteriologist was at present somewhat hampered with his cultivating medium. It was well known that some organisms would only grow in the presence of air, while others refused to grow under such conditions. Whilst doubting the practicability of Mr. Vaughan's suggestion that every cheese-maker should

employ a bacteriologist, he thought that something might be done in this direction. While some dairies were model institutions, the ordinary surroundings of the dairy in the typical country district were most filthy.

Dr. KLEIN said that we had been persecuted by the word "ptomaine," which had often been used by those ignorant of its meaning simply to prevent further inquiry. He then described a series of cultivation experiments he had undertaken with meat poisons, and showed by means of lantern and screen a series of photographs from the "Welbeck" cases, and the poisoning cases Nos. 9 and 13 in Dr. Ballard's paper.

Dr. FLEMING said that Professor Blanchard had shown in a remarkably lucid and interesting manner the source of production of physiological and pathological materials which were considered dangerous in certain foods, and Drs. Ballard and Vaughan had corroborated what had often been reported in discussing the question of meat infection. The filthy condition of the slaughterhouses of most towns ought to be held in consideration, and he thought that sanitarians should deal with this practical aspect of the matter, as the public would expect to be safeguarded from danger. It was important to study how best to prevent the occurrence of poisoning from food, how to obviate, for instance, putrefactive changes in canned meats. A systematic inspection of slaughterhouses ought to be insisted on.

INFECTIOUS UDDER DISEASES OF THE COW IN RELATION TO EPIDEMIC DISEASES IN THE HUMAN SUBJECT.

Dr. E. KLEIN, F.R.S., said that in several epidemics of Scarlet Fever brought about by milk, Mr. Power had established that the infectiveness of milk was not due to contagion from a human source, but that probably a pathological condition of milch cows—undiscovered before 1885—played a prominent part in giving to their milk the power to produce Scarlet Fever in the human subject.

Scarlet Fever.—In an epidemic of Scarlatina occurring in the north of London towards the end of 1885 and beginning of 1886, Mr. Wynter Blyth showed that it was attributable to milk coming from a farm at Hendon. Dr. Cameron, Medical Officer of Health for the Hendon district, had, with Mr. Power, conclusively proved that all ordinary sources of contagium—as insanitary condition of the farm, cases of human Scarlet Fever, etc.—were excluded from the Hendon milk, and they further showed that the milk possessed infective power for a succession of days and weeks. The conclusion arrived at was that the cows themselves were the source of the contagium. They found cows at the farm actually affected with a contagious eruptive disease of the teats and udder; further, that the disease had been introduced into the farm by two cows recently acquired. Mr. Power and Dr. Cameron conclusively proved that the spread of the Scarlet Fever, by particular sections of this milk, was dependent on the presence of the udder disease amongst particular cows of the farm. The nature of the cow malady was definite, both as to its local manifestations and as to the pathological condition of the viscera, as also in its non-communicability to the milkers' hands. Various objections had been raised against the conclusions thus arrived at, but on analysis would be found unessential to the main points, and also based on incorrect data. Two further outbreaks of Scarlet Fever observed since the Hendon epidemic could be referred to a similar cow disease.

The Edinburgh Disease.—A second epidemic disease, referable to cow disease, was the Edinburgh disease. In this instance milk coming from a particular dairy had been proved by Drs. Cotterill and Woodhead to have caused amongst children of a s hool a febrile disorder, accompanied by swelling and inflammation of the mucous membrane of the throat, not being

Scarlet Fever or Diphtheria. In this instance the milk was derived from milch cows affected with an eruptive disease of the udder and with visceral disease. The disease had different characters. In both the Hendon and Edinburgh diseases the stoppage of the milk consumption was coincident with the termination of the spread of the disease in the human subject.

Diphtheria.—A third epidemic disease referable to cow disease was Diphtheria. Mr. Power had shown that in several epidemics of Diphtheria brought about by the consumption of milk, the latter had most probably received infective power direct from the cow, and not from a human source. In this respect the epidemic of Diphtheria prevailing in 1886 in Yorktown and Camberley deserved specially to be mentioned. Although the cows of the incriminated dairy were said to have been healthy during the prevalence of the Diphtheria epidemic (October 8th to 18th), there was one cow in that dairy which at the beginning of November still showed a scab or crust. This was more marked in an epidemic of Diphtheria at Barking in 1888—investigated by Dr. Mason—where an eruptive disease of the teats and udder of the milch cows was very conspicuous, and in another milk-diphtheria epidemic in Croydon in 1890—investigated by Dr. Philpot. Dr. Klein added that he had produced experimentally in cows by inoculation under the skin of the shoulder with cultures of the Diphtheria bacillus, an eruptive disease of the udder, which belonged to the same category of eruptive diseases as the above. Visceral disease in these cows was also a prominent feature. At a particular stage of the eruptive disease, experimentally induced, the milk of the cows was shown to contain the Diphtheria bacilli.

An animated debate, lasting three hours, ensued upon this paper, in which Mr. H. E. Armstrong, Medical Officer of Health for Newcastle, Dr. Geo. Turner, Medical Officer of Health for East Staffordshire, and Dr. Bostock Hill, Medical Officer of Health for Birmingham, gave various illustrations of outbreaks of disease caused by milk which appeared to support Dr. Klein's conclusions.

On the other hand, Professor CROOKSHANK contended that there was no evidence in support of Dr. Klein's theory that these specific diseases in the human subject ever arose from eruptions or skin diseases of the cow; and he gave particulars of some investigations which he had himself conducted on behalf of the Veterinary Department of the Board of Agriculture.

Dr. OSTERTAG (Stuttgart) was of opinion that Scarlet Fever was not communicable from man to animals. Dr. Loeffler had inoculated animals with blood from the eruption of Scarlet Fever in man, but had never produced the disease in the cow. With regard to Dr. Klein's experiments, the general opinion in Germany was that Dr. Klein had confounded the disease in question with either Cow-pox or Foot-and-mouth disease.

Professor MACFADYEAN (Edinburgh) gave his experience of an outbreak of sore throat at Edinburgh, referred to by Dr. Klein in his paper, and relied upon by him as evdence in support of his views; and Professor WALLEY, of the Royal Veterinary College, Edinburgh, added some particulars of the same outbreak from a veterinary point of view.

Dr. W. J. COLLINS (London) spoke against the contentions of Dr. Klein, and Dr. HIME gave his experience in connection with milk supply in the town of Bradford, of which he had been for many years Medical Officer of Health.

Professor BROWN, C.B., said that it was highly important in all epidemics of this kind where diseases in animals were supposed to give rise to epidemics in the human species, that the two departments of the State which had respectively to deal with sanitary and veterinary matters should make a conjoint inquiry. He thought that if that course had been adopted with the Hendon outbreak, of which so much had been spoken, the matter would not now be in its present unsatisfactory condition.

Professor CHAUVEAU (Paris), whose rising was greeted with loud cheers, stated that he had not himself made personal experiments lately in regard to this subject, but he gave details of the results of experiments by his colleagues. Cow-pox was prevalent in France, as it was in England, and it was very widely distributed in Germany. In France, too, Horse-pox was even more prevalent than Cow-pox. Some years ago he had personally made experiments with the object of transmitting the Small-pox virus to bovine animals, but had met with no success whatever. Since then, however, he had been more successful, and as the result of a very considerable number of experiments he had found himself able in every case attempted to communicate the Small-pox virus to bovine animals, but he had never in any attempt succeeded in transforming this Small-pox virus into vaccine. The Professor detailed at some length his researches into the forms which variola assumed in different animals.

The PRESIDENT said they had had a very interesting and instructive discussion, which he had no doubt would bear fruit. The limit of time had expired, and as they had two other interesting papers on analogous subjects, by Dr. Ostertag on the regulation of the milk supply, with reference to the diseases transmissible by milk, and by Mr. Francis Vacher, F.R.C.S.Ed., on the inspection of meat with regard to the prevention of disease, he thought it might be advantageous that they should have a special meeting on the following day to discuss these questions, and that afterwards they should adjourn to the conjoint meeting already arranged for in Section II. to consider the question of Tuberculosis in all its bearings.

August 13th.

The PRESIDENT was in the chair, supported by Professor Perroncito and Dr. Fleming, C.B., as Vice-presidents.

MILK SUPPLIES AND DISEASE.

Dr. OSTERTAG (Stuttgart) read a paper on the inspection of milk supplies with regard to the prevention of disease. He said that most countries had till now paid but slight attention to the sanitary question of the milk-supply, and had contented themselves with forbidding the sale of adulterated milk or of milk from diseased animals, without taking proper steps to ensure obedience to their orders. A praiseworthy exception to this was to be found in the Italian law of provision supplies of August 3rd, 1890. It was the undeniable duty of the State to see that only pure milk entered the market. The consumer was not in a position to guard himself against the manifold dangers which attended the consumption of milk, which might contain the most harmful ingredients in spite of white colour and sweet taste. Such milk could only be banished from the market if the milk-supply was controlled by Government officials. Only pure milk could be tolerated in the market—that was, milk obtained with the greatest cleanliness from healthy animals, and possessing normal physical qualities and a certain degree of strength. For sanitary reasons the following kinds of milk must be excluded from the market:—(1) Milk which, without being necessarily prejudicial to health, was peculiar in colour, taste, or consistence—nauseous milk; (2) all milk that was prejudicial to health, or which was suspected, on good grounds, of being so. To the first group belonged colostral milk, blue, red, and yellow milk; further, slimy, thready, bitter, salt, as well as abnormally smelling milk, and milk that had been made impure by mud or other substances. The milk of animals that had been fed on poisonous fodder, or that had been treated with certain medicaments, and of those suffering from Tuberculosis, malignant Pustule, Cow-pox, Aphthæ, or generally ill in consequence of some

process inducing ulceration or ichor, must be regarded as prejudicial to health. The possibility of milk being of a hurtful nature was suggested in all the other feverish ailments common to milk-yielding animals, as also by the different forms of inflammation of the udder. Again, milk which had already been drawn might become infected by immediate contact with sick persons (Typhus Fever, Cholera, etc.), or through being kept in rooms where such persons were. Finally, through being carried in unsuitable (metal) vessels, injurious substances might find their way into the milk.

Dr. VACHER (Birkenhead) said that England had paid more attention to milk than meat, though there was still much to be done. But medical officers, if they applied the powers given them by the local sanitary authority, the Contagious Diseases Acts, and the Food and Drugs Acts, could do a great deal. In his own district they had a register of milk shops and dairies, and the milk was periodically examined. He endeavoured to prevent the sale of milk which had been skimmed and watered, which was infected with bacteria (blue or red milk), which came from animals with Foot-and-mouth disease or Tuberculosis, or which was infected with human disease (Scarlet or Typhoid Fever). He advocated registration and licensing of farms, dairies, and shops, and an efficient inspection by medical and veterinary officers.

Professor BROWN alluded to the sources of contamination of milk, and he mentioned that he had isolated organisms from perfectly healthy milk. There were a large number of towns in which there were no regulations at all, or no attempts made to enforce such regulations as existed. In cases of compulsory closing of a dairy, compensation to the dairyman should be allowed. Boiling of milk had long been urged as a necessity, but objections on the score of unpleasantness had often been urged.

Dr. PERRONCITO (Turin) said that observations made on milk and butter, which had been communicated to the Veterinary Academy of Turin, showed the presence of tubercle bacilli. A regulation existed at Turin which prohibited the sale of the products of diseased cows, especially if they were tuberculous.

Dr. ARMSTRONG (Newcastle) agreed as to the necessity of licensing dairy farms; he held that the milk of tuberculous cattle should be forbidden, and both tuberculous and parturient cows should be notifiable. He was of opinion that the tubercular diathesis could be conveyed by milk even if the bacilli themselves were not transmitted. He objected to recommending the boiling of milk; it was beginning at the wrong end, and was like recommending the cooking of measly meat.

Professor WALLEY saw no harm in the general use of colostrum milk from tubercular cows. It was a great mistake for children to use the milk from one cow only. He agreed that Tuberculosis should be scheduled, and referred to the insanitary, and even filthy, condition of cowsheds and dairies, and the difficulty of obtaining any reforms in this direction. He advocated the use of condensed milk for children.

Dr. ROBINSON, of Dover, described an epidemic of Typhoid Fever in which the disease was conveyed by contaminated milk, and he gave also an account of an Apthous Fever in man produced by the consumption of milk from cows affected with Foot-and-mouth disease.

Dr. FLEMING, in referring to the diseases incidental to parturition in the cow, pointed out the injury that occurred through confounding two quite different maladies, and stated that the milk and flesh of animals affected with parturient apoplexy were not necessarily dangerous, whereas the milk and flesh of cows suffering from parturient fever *(Septic metritis)* were highly dangerous.

Dr. EDWARD SARGENT (Lancashire) drew attention to the danger arising from the maturing of cheese in bedrooms under other insanitary conditions.

The PRESIDENT, at the close of this discussion, said that the subject to which Dr. Ostertag in his able paper had drawn their attention, was undoubtedly of great importance, and he trusted it would receive the consideration it deserved.

INSPECTION OF MEAT WITH REGARD TO THE PREVENTION OF DISEASE.

Mr. FRANCIS VACHER, Medical Officer of Health for Birkenhead, read a paper on the inspection of meat with regard to the prevention of disease. He said that modern research had forced on the attention of the medical profession that there was no line of separation marking off the diseases of animals from those of man. A truth so obvious should have been clearly recognised long since; but, that while the conditions of health and causes of disease in man had been studied by physicians and medical officers of health, the conditions of health and causes of disease in the lower animals had been studied by veterinarians. Both studies were closely related branches of the same subject, and could be most profitably pursued together. The diseases of animals used for food and their relation to the diseases of man could nowhere be so well studied as in the public abattoir. Unfortunately in this country public abattoirs were not generally provided, and in those that existed the bulk of the interesting pathological material presented was wasted, because we had as a nation no properly organised system of meat inspection. Split carcases, dressed and cold, were viewed and passed without the viscera or any part thereof being produced, and their fitness for food was commonly decided by a nuisance inspector or market constable.

Dr. OSTERTAG, of Stuttgart, gave a full and detailed account of the system of public slaughtering carried out in Berlin, Baden, and other parts of Germany.

Dr. FLEMING spoke of the disgraceful condition of most of the private slaughterhouses in the country, and strongly urged that part of the curriculum of medical students should be the study of comparative pathology.

Professor WALLEY showed specimens of tuberculous glands of animals that had been passed as fit for food.

Mr. ADAMS, of Maidstone, approved of Mr. Vacher's proposals.

Mr. G. T. BROWN, C.B., was strongly in favour of public abattoirs, but pointed out some of the difficulties in the matter.

Professor MACFADYEAN (Edinburgh) preferred the German system to that advocated by Mr. Vacher as being more satisfactory and simple.

Mr. VACHER replied to the points raised in the debate, and expressed his gratification that the reforms which he had so long urged as to the inspection of meat and the registration of slaughterhouses had met with such general acceptance.

THE ALLEGED DANGER OF CONSUMING THE APPARENTLY HEALTHY MEAT AND MILK OF TUBERCULOUS ANIMALS.

It was arranged that Section II. (Bacteriology) should combine with Section III. in discussing this question.

Professor BURDON SANDERSON, in opening the discussion, said the subject might be considered under two heads, the pathological and the practical. Under the first came the acceptance of the tubercle bacillus, and therefore of the infectivity of the disease and the identity of Tuberculosis of man and cattle; any differences which might exist being due to differences of soil. Then came the question of the existence of a risk and the degree of that risk. Did the existence of Tuberculosis in the human subject depend upon the consumption of the meat and milk of tuberculous animals? Nothing that was true could be exaggerated. The consumption of tuberculous meat was a danger, but if there was a law passed to-morrow to prevent the sale

of that meat the result would depend upon the power of discrimination. The services of skilled persons would be required. Science would have to determine exactly the conditions which indicated danger. The inspector must have had a scientific education and have acquired special technical skill, which might be compared to that of a tea-taster. We could not yet assert that the introduction of the tubercle bacillus by the intestinal tract would produce generalised Tuberculosis. Our knowledge of Tuberculosis of the lymphatic and osseous system in children was very incomplete. The creation of a systematised inspection extending not only to the great towns but over the whole country was desirable, and Tuberculosis should be included in the schedule of the Contagious Diseases (Animals) Act. Inspection involved compensation, and this would not be effectual unless there was just compensation. It would be necessary to ascertain to what extent compensation was necessary, and to levy a tax on meat to cover this.

Dr. BANG, of Copenhagen, who followed, doubted whether it was possible to enforce the destruction of tuberculous meat. He did not believe that more than 1 per cent. of animals were tubercular. He still believed, from the series of experiments on a large number of animals, that it was only exceptionally that milk contains tubercle bacilli. It was only occasionally that the juice of tubercular meat was virulent. Even in rabbits inoculated through the veins, the meat contained bacilli only during the first five days. There was no multiplication of bacilli in milk. It was only in miliary (acute) Tuberculosis that a large number of bacilli entered the vessels. The blood of cows extremely tubercular, when inoculated into rabbits, gave in one series of experiments 18 negative results and two positive results. He had come to the conclusion that the destruction of meat in chronic Tuberculosis was not necessary. Hence only limited inspection of meat was necessary. The eating of undercooked meat was, however, to be deprecated.

Professor ARLOING (Lyons) thought that precautionary measures ought to be adopted and strictly applied. The early diagnosis of Tuberculosis was not more difficult than Glanders. He quoted statistics to show that veterinary surgeons were learning to recognise early Tuberculosis with greater certainty. Thus, in 1888, 83 animals were reported as being tubercular, while in 1889 the number was 890; in 1890, 1,100; and in 1891, 597 in the first five months. He agreed that milk should be boiled. Professor Bang's figures tended to show that the eating of tuberculous meat should be prohibited. From experiments on guinea-pigs he found that, even allowing for cooking, etc., a large number of guinea-pigs could be made tubercular. He was of opinion that great care should be taken, and therefore that the meat of all tubercular animals ought to be destroyed, or that the meat should be used only after being sterilised, the owners being compensated for the loss of value.

Professor MACFADYEAN and Dr. WOODHEAD read a paper on the same subject. Their observations agreed in the main with those of Dr. Bang. They thought that the attention of the legislature ought to be called to the urgent necessity of abolishing private slaughter houses, and instituting a general system of meat inspection, with a view to remove or diminish the existing risk of dangerous diseases being contracted through the consumption of unsound or disease-affected animal food.

Professor HAMILTON (Aberdeen) referred to the two main channels, respiratory and gastro-intestinal, by which the tubercle bacilli gained entrance into the body. In the case of the intestine the cause of infection was that its mucous membrane has been weakened by previous disease.

Professor NOCARD (Paris) thought there was not sufficient proof that the ingestion of tuberculous meat was the cause of Tuberculosis. He thought, however, that such meat had special dangers for children.

Dr. BARLOW (London), while admitting the great value of the results which had been gained by means of experiment on this subject, was nevertheless unable to admit that these results were endorsed by clinical experience. There was no evidence to show that the consumption of tuberculous meat or milk was the primary cause of Tuberculosis in children. In his opinion, the insanitary conditions to which the children of the poorer classes were exposed played a most important part in the production of Tuberculosis in children. He thought, however, that, having regard to the dangers connected with the consumption of tuberculous meat, some greater caution should be exercised in the use of raw meat juice, so frequently recommended for children.

Professor BURDON SANDERSON replied; and a resolution which he moved, that, "The etiology of tubercular disease of early infancy between three months and five years old be referred for discussion at the next Congress," was seconded, and unanimously carried.

August 14th.

Sir NIGEL KINGSCOTE, President, took the chair, and was supported by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, United States Department of Agriculture, and Dr. Fleming, C.B.

ACTINOMYCOSIS AND OTHER INFECTIOUS DISEASES OF ANIMALS COMMUNICABLE TO MAN, OR VICE VERSA.

Professor PERRONCITO described an epizootic disease transmissible from animals to man, the cause of which appeared to be an organism, which he named *Proteus virulentissimus*. He also mentioned cases of Actinomycosis of the Skin, and of *Trichophyton tonsurans*, and of *Cysticoreus tænia mediocanellata*, and referred to the wide diffusion of certain other diseases which were the cause of Anæmia among workers in the Mont Cenis Tunnel.

Professor CROOKSHANK reported on the prevalence of Actinomycosis, giving a description of its manifestations, and mentioning that in Australia and other colonies it had often been mistaken for Tuberculosis. The disease was undoubtedly found in man, but was not of sufficient frequency to make it an important disease.

Professor PONFICK (Breslau) drew attention to the fact that this disease was usually contracted through the fodder. It commenced in the mouth or throat, and affected the lungs secondarily. He mentioned a case in which the disease had been communicated to a boy by the awn of barley, from which he argued that the cause of the disease in man was practically the same as in animals, showing that there was a common cause of the disease in animals and man, rather than that it was transmissible directly from one to the other.

Professor NOCARD (Alfort) mentioned certain countries in which the disease was endemic, whilst in others it was practically absent. He referred to the position in which the growths were found in cattle, and showed how they could interfere with the nutrition of animals, and so spoil them for food supply. He did not think it was sufficiently well known to warrant any active legislation, but he thought it was sufficiently interesting to render it necessary that a careful pathological study of the disease and its fungus should be made.

Dr. DOYEN (Rheims) gave a demonstration of some beautiful photographs of different forms of Actinomycosis met with in cattle and in human subjects.

Dr. IVANOV (Moscow) had seen more than 2,000 cattle affected with this disease during an experience of two years as an inspector in the sanitary ser-

vice of Moscow. He looked upon it, however, as a benign disease, and did not attach too great importance to its presence.

Dr. SALMON (Washington) said that improper deductions had been drawn for the American statistics on the subject, and gave some particulars of the researches of his own department.

The debate was continued by Mr. F. Goodall, Professors Walley and McFadyean, Mr. Barrett, Sir Henry Simpson, Dr. George Fleming; and Prof. Crookshank replied to the various points that had been raised.

ANTHRAX AND ITS RELATIONS TO WORKERS IN VARIOUS TRADES.

Professor CHAUVEAU read a paper on this question, and

Mr. DUGUID, Assistant Inspector of the Board of Agriculture, read a paper on the same subject.

Dr. LODGE, jun., who said he had an hereditary interest in the subject, as his father was the first to be consulted in the Wool Sorters' Disease many years ago, showed specimens of infected wool, and gave the result of his own researches into the matter.

Dr. G. FLEMING and Dr. HIME also spoke on this subject.

VETERINARY HYGIENE.

Mr. FRED SMITH read a paper on "Veterinary Hygiene." He contended that the veterinary profession in this country was neglected, and urged that the Royal College of Veterinary Surgeons should be requested to institute examinations in veterinary hygiene, and to have the subject taught in the schools. The value of veterinary hygiene to the State could not be overestimated; by its services for many years past, Glanders, Farcy, Mange, Canker of the Foot, Specific Ophthalmia, and other diseases were now practically unknown in the Army. He recommended a periodical census of horses.

Mr. GOODALL made some observations on the subject.

This terminated the business of Section III., and, on the motion of the PRESIDENT, unanimous votes of thanks were passed to the readers of the several papers throughout the sittings of the Section, to the Geographical Society for the use of the rooms, and the Royal Veterinary College for the use of their apparatus and microscopic slides.

Professor CHAUVEAU, in a felicitous speech in French, said he was extremely happy to be able to return in time to propose, in his capacity as a foreign visitor to the Congress, a cordial vote of thanks to their distinguished President. His assiduous attention and active interest in their discussions, his charming personality, and the admirable manner in which he had directed and distributed the precise time allotted to the numerous speakers, deserved their most sincere thanks. He offered his hearty congratulations to the President upon the success of the Section over which he had so ably presided. (Loud cheers.)

The vote was seconded by Dr. SALMON, and carried by acclamation.

Votes of thanks were also passed to the three Secretaries of the Section, Mr. Ernest Clarke, Dr. G. Sims Woodhead, and Mr. W. Duguid, on the motion of Dr. HIME, seconded by Professor WALLEY, and the proceedings were concluded.

OUR FOREIGN COLLEAGUES AND GUESTS.

AMONG the many hospitalities extended to our foreign colleagues during their attendance at the International Congress, perhaps none was more congenial to their feelings than the banquet to which they were invited by the Royal College of Veterinary Surgeons, and which took place at the Hotel Metropole, on the evening of August 14th. A large number of members of the Veterinary

profession—about thirty—assembled to meet the guests, who were Drs. Chauveau, Arloing, Nocard, Railliet, Menard, Blanchard—all from France; Dr. Perroncito, Turin; Dr. Ivanov, Moscow; Dr. Salmon, Washington; Dr. Pearson, Philadelphia; Dr. Ostertag, Berlin; Dr. Woodhead, London; Dr. Hime, Bradford; E. Clarke, London; Professor Trasbot, Alfort; T. J. Reeves, London; and Professor Bang, Copenhagen.

The President of the Royal College, J. D. Lambert, C.B., occupied the chair, and after the usual loyal toasts, Dr. Fleming proposed that of "Our Foreign Colleagues." This was responded to by Dr. Chauveau, who spoke in flattering terms of the progress made by veterinary medicine in this country, as noted by him, during three visits he had made to England at wide intervals, and lauding individuals who had assisted in effecting this progress—Dr. Arloing, Professors Perroncito, Railliet, Ivanov, Ostertag, Salmon, Bang, Nocard, and Pearson. The "Medical Profession" was proposed by Sir Henry Simpson, and responded to by Drs. Hime and McWeeney; while the toast of the "Secretaries of Section III," was responded to by Dr. Woodhead.

Altogether the affair was most successful and gratifying, and the guests expressed their delight with their professional reception.

On August 16th, Dr. Fleming entertained a number of these visitors at St. John's; and on the 17th, Sir Henry Simpson extended similar hospitality to them at Windsor.

THE CONGRESS ON TUBERCULOSIS IN PARIS.

THE Congress for the Study of Tuberculosis held its second bi-annual meeting in the amphitheatre of the medical school at the end of July; M. Villemin presided. The Congress was closed on August 2nd.

The President, in his opening address, summarised the clinical, anatomo-pathological, and bacteriological researches that have been made in connection with Tuberculosis. He rapidly reviewed his own researches concerning the contagious character of Tuberculosis, also those of M. Grancher. Koch's discovery of the bacillus Tuberculosis was duly insisted on, likewise his therapeutic attempts to treat the disease with "tuberculin." The sclerogenic method recently adopted by M. Lannelonge, consisting of chloride of zinc injections into the affected area, was also alluded to.

The last words of the presidential address were by no means encouraging, though they may stimulate research: "We must for a long time," said this learned investigator, "be content with incomplete success."

One of the most interesting questions discussed was the identity of human and animal Tuberculosis. M. Chauveau and M. Vignal contributed two interesting papers. M. Chauveau demonstrated the identity of human and bovine Tuberculosis, and M. Vignal demonstrated the non-identity of human and avian Tuberculosis. M. Chauveau had made three series of experiments—infection by ingesta, by venous injections, and by subcutaneous injections. He chose three animals, one of six, one of eleven, and another twelve months old. To the one of six months old he gave a piece of tuberculous lung tissue reduced to pulp, to that of eleven months he gave a mixture of caseous and miliary lung tissue, and to the one of twelve a fragment of caseous lung tissue. These three animals became tuberculous, manifesting the same condition as three others inoculated with bovine Tuberculosis. Venous injection and subcutaneous injections of the products of human tuberculin resulted in producing bovine Tuberculosis.

M. Vignal's experiments, which were quite recent, were made known for the first time. A few years ago M. Nocard and M. Roux published some experiments made with a view to demonstrate that the Tuberculosis of gallinaceæ is an attenuated form of human Tuberculosis. M. Vignal, in

order to test the definite value of this hypothesis, made a series of experiments at the College de France. In order to ascertain whether the bacillus of Koch, by passing through several generations in the bodies of gallinaceæ lost its virulence and presented the character of the Tuberculosis of gallinaceæ, he inoculated a pheasant with pure human tuberculous cultivations (not sputa, as some papers have erroneously reported). At the same time a guinea-pig was inoculated with an identical cultivation. The animal became infected and died rapidly, a proof of the virulence of the cultivation used for inoculation, but the pheasant two months subsequently was in perfect health. M. Vignal inoculated the bird a second time with a stronger dose of virus, this time also inoculating a guinea-pig, but with one-fifth of the dose given to the pheasant; the guinea-pig died, the pheasant remained in good health. A third inoculation was made, pure bacilli being again used. The guinea-pig died, and the condition of the pheasant was unaltered. In this experiment the dose injected into the guinea-pig was the twentieth part of that injected into the pheasant. The result of these experiments demonstrated the non-identity of human and avian Tuberculosis. The bacillus of Roux and Nocard cannot, therefore, be considered as an attenuated form of human Tuberculosis, otherwise M. Vignal's pheasant would have succumbed. M. Vignal does not consider Nocard and Roux's bacillus identical with Koch's bacillus of Tuberculosis, although in certain animals it produces lesions identical with those produced by this bacillus.

This fact, however, is not the only one of its kind. M. Malassez and M. Vignal, in 1883, demonstrated that tuberculous lesions can be produced by various micro-organisms. MM. Strauss and Gamaleia, by inoculating guinea-pigs with the products of avian Tuberculosis, arrived at the same results as those obtained by M. Vignal.

MM. Cadiot, Gilbert, and Roger have made experiments on rabbits and guinea-pigs with avian and human Tuberculosis. The results of their experiments demonstrated the non-identity of these two bacilli. They, nevertheless, maintained that they had the same origin. MM. Cormont and Dor followed in the footsteps of MM. Cadiot, Gilbert, and Roger. Their experiments demonstrated the non-identity of the bacillus of human and avian Tuberculosis, but they likewise maintain that there is a unity of origin.

M. Daremberg did not read any original paper, but rendered good service by summing up the evidence furnished by the different papers read. His judgment embodied M. Vignal's conclusions, namely: Human Tuberculosis and avian Tuberculosis are not produced by the same bacillus. Furthermore, the experiments made with avian Tuberculosis are valueless in furnishing data concerning human Tuberculosis.

THE FELLOWSHIP OF THE R.C.V.S.

On July 28th an examination for the Fellowship of the Royal College was held at Red Lion Square, when the following gentlemen passed the necessary test and were admitted as Fellows:—Captain Hayes, J. Abson, W. H. Bloye, W. F. Shaw, W. Roach, H. K. Shaw. The examiners were Dr. Fleming, C.B., J. Roalfe Cox, and Prof. Duguid.

Reviews.

EPIDEMIC INFLUENZA: NOTES ON ITS ORIGIN AND METHOD OF SPREAD. By RICHARD SISLEY, M.D. (London: Longmans, Green, and Co. 1891.)

It was to be expected that the recent visitation of epidemic Influenza, which was as severe as it was remarkable, would produce a large addition to the medical literature of the subject; and among the most noteworthy contributions of the day is the book of Dr. Sisley—a work showing much careful investigation into the history of the outbreak, and a praiseworthy desire to arrive at some definite conclusions with regard to the nature and cause of extension of the disease. Chapters are devoted to the nomenclature of Influenza, the origin of the malady, its method of spread—and especially by contagion—the history of various invasions, incubation period of the affection, and Influenza in animals. Among the conclusions arrived at from the evidence he places before his readers is the important one that the disease is contagious, and is chiefly, if not entirely, spread by contagion.

With respect to the disease in animals, he gives quotations illustrating the disagreement among veterinary surgeons as to the transmissibility of Influenza of man to animals or *vice versa*, but the affirmative evidence he furnishes will not bear investigation, and is certainly swamped by the negative evidence, and the experience and observation of everyone who has had much to do with horses during epidemics or epizootics of the disorder. The opinion of Dr. Fleming, which was solicited by Dr. Sisley, and appears at page 120, will probably be endorsed by those who have paid most attention to the matter in question. His opinion is as follows: "The horse is probably the only domesticated animal which suffers from a disease apparently in every respect identical with that which is known as Influenza in mankind, and consequently has been given this designation by veterinary surgeons; for though in some rare instances a catarrhal disorder has prevailed among other creatures, and especially dogs, at the same time that Influenza was attacking the human species or horses, or both, yet it has been generally admitted that this was only coincidence, and that there was no relationship between the affections in a clinical or even etiological point of view. Neither would there appear to be distinct evidence to support the notion which has been brought forward at times, in favour of an absolute identity in causation between human and equine Influenza, and which is perhaps based on the close similarity in symptoms in the two species. For there have been widespread invasions of the disease in the human populations of many countries without horses showing any signs of it; while, on the other hand, most extensive and serious epizootics have prevailed among the equine species on more than one continent, and yet people were exempt. Even in the present visitation (1889-1890) we are not in a position to assert that the ordinary seasonal and climatic malady, which is usually seen among

horses during the late autumn, winter, and early spring months, and which is commonly designated Influenza, has been more noticeable in the United Kingdom than in other years. True, from some quarters we hear of more sickness of this description than is ordinarily noted; but these might be looked upon as merely sporadic outbreaks. There has been nothing at all like a universal visitation among horses, such as has often been witnessed, and such as has characterised the human epidemic that has within the last few months manifested itself in such a startling manner on the continents of Europe and America. In the great epizootics of horse Influenza, the gravest inconveniences were experienced in large towns and cities by the almost complete cessation of traffic and transit; but nothing of this kind has been reported from any of the countries which have been recently visited by human Influenza, and none of my foreign professional correspondents have alluded to horses suffering from any unusual disease. In the records of human Influenza, it is noted that some visitations were preceded or accompanied by a similar affection among horses. In the present epidemic I have not been able to discover that either on the European or the American continent these animals were affected with any unusual disease. Neither does the history of horse Influenza show that an invasion of the malady in one species was at all a certain precedent or accompaniment of the disorder in the other. On the contrary, it has repeatedly happened that the equine populations in European countries, and more than once in America, have been generally and most severely visited, while mankind has enjoyed complete immunity. (In proof of this, I may refer to the history of the malady, given chronologically and descriptively in my work on 'Annual Plagues,' in two volumes published in 1871 and 1882.) Neither is there any good evidence that the disorder has ever been communicated from horses to mankind, or *vice versa*, notwithstanding the great opportunities for such transmission—if such could be effected—which are offered in large horse-establishments and in cavalry regiments.

"When mankind and horses are coincidently affected with Influenza, it may therefore be looked upon as a mere casual occurrence, and not as the concomitant result of a common cause. There are presumably two factors operating in the production of the human and the equine disorder; though they must be related to each other in the closest possible manner, as they produce such markedly similar effects—just as do the germs of Small-pox, Sheep-pox, and Cow-pox, and some other human and animal affections.

"The evidence, so far, appears to favour the view entertained by many veterinary surgeons as to the contagiousness of Influenza. But it must be acknowledged that there must be an individual predisposition or receptivity, and this not only for the reception of the virus, but also for the manner in which it will manifest its effects.

"It may be observed that dogs and cats, as well as other animals, have suffered—though at very long intervals—from epizootics, in which catarrhal or Influenza symptoms predominated."

TRAITEMENT CHIRURGICAL DU CORNAGE CHRONIQUE. By P. J. CADIOT. (Paris: Asselin and Hozean. 1891.)

M. Cadiot, Professor of Surgery at the Alfort Veterinary School, has just published a little *brochure* of thirty-one pages describing the surgical treatment of chronic Roaring, and giving a summary of the results. From what has been done in attempting to remedy this serious defect in horses in England, Germany, and the United States of America, it might have been anticipated that France, where operative veterinary surgery has always been something of a speciality, would not be long in instituting experiments in the same direction, and improving on the procedure if such was necessary.

Cadiot may thank his stars that in this particular operation—or perhaps in any other—he is not in England, where those who embark on such attempts have to pay a heavy penalty, and quickly discover that it is wiser to leave them to the veterinarians of other lands. Our French colleague is perfectly safe from such annoyance, for in the words of Sterne, "They manage these things better in France."

Cadiot operates after the manner already described in this country and Germany—opening the larynx in front and excising the left arytænoid cartilage. The mucous membrane is spared as much as possible, and after the cartilage is removed its cut margins are brought together by suture, so as to leave a very small wound. The different steps in the operation are described with much care, and in order to make the description better understood some good illustrations are given. The after-treatment is also carefully dealt with, and the accidents and complications are alluded to in detail.

In conclusion, Cadiot briefly sums up his experience of the results of the operation in the following terms: "Arytænectomy has been variously estimated by the veterinary surgeons who have practised it, and it does not appear to me to be possible at the present time to rigorously appreciate its value; so that before giving a definite opinion it will be necessary to have more information. But I can state that it has yielded me a very encouraging proportion of successes, and that in the fortunate cases the cure of Roaring has been complete and durable."

A similar result appears to have attended the operations of an American colleague, whose paper is published in another part of the present Journal; and there can scarcely be a doubt that as the operative procedure is improved in the course of time, and suitable cases are selected, the proportion of successful cases will become increased. It is now an established fact that Roaring can be cured by surgical operation, and that the cure can be permanent and complete.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JULY 23RD.

J. D. Lambert, Esq., C.B., President, in the Chair.

Present:—Professors McCall, Penberthy, Walley, Williams; General Sir F. Fitzwygram, Bart., Dr. Fleming, C.B., Sir H. Simpson, Messrs. Burnett, Cartledge, Edgar, Fraser, Hunting, Kettle, Kidd, Malcolm, Mason, Mulvey, Nisbett, Raymond, J. F. Simpson, Trigger, Wheatley, Whittle, Wragg, Thatcher (Solicitor), A. W. Hill (Secretary).

The PRESIDENT thanked the Council for the honour they had conferred upon him in electing him to the presidential chair, and assured the members he would always do his utmost to further the interests of the profession.

The SECRETARY read the notice convening the meeting.

On the motion of Professor MCCALL, seconded by Dr. FLEMING, the minutes of the previous meeting were taken as read and confirmed.

Absentees.

The SECRETARY stated that he had received letters from Messrs. Brown, Greaves, Blakeway and Taylor, regretting their inability to attend the meeting.

Presentation to the Library.

The SECRETARY announced the presentation of the second edition of "Chauveau's Comparative Anatomy," by Dr. Fleming.

On the motion of Professor WILLIAMS, seconded by Professor MCCALL, a vote of thanks was passed to Dr. Fleming for his gift.

Correspondence.

The SECRETARY read a letter from Mr. Simcock resigning his appointment as member of the Council.

Letter read from the North of England Veterinary Medical Association, containing copy of resolution passed at their quarterly meeting.

Letter read from Professor Williams with regard to an application from a veterinary surgeon in America, who wished to know if some consideration could be made in virtue of his holding a diploma.

The SECRETARY stated that Professor Williams had replied saying that no concession could be made, and that the whole of the curriculum must be gone through.

Letter read from Mr. Secker applying for a certificate in lieu of his diploma, which had been destroyed by fire.

On the motion of Mr. HUNTING, seconded by Mr. TRIGGER, it was resolved that the certificate should be granted.

The following letter was read from Mr. H. J. Rogers, on behalf of the Central Veterinary Medical Society:—"I beg to inform you that the Council of this Society has agreed that a sum of £50 be given to the Exhibition or Prize Fund of the Royal College of Veterinary Surgeons unconditionally."

On the motion of Professor WALLEY, seconded by Mr. MASON, a vote of thanks was accorded to the Society for the donation.

The SECRETARY said that he had received a letter from Mr. Lyman, of the Harvard University, begging the recognition of his College, and furnishing reasons for such application.

The PRESIDENT said that he was informed by the Solicitor that the subject had already been reported on as not satisfying the requirements of the College.

Letter read from Mr. Banham.

Dr. FLEMING undertook to write privately to Mr. Banham as to the contents.

The SECRETARY read the report of the result of the Conference of Examiners and Principals of Schools. At the London Examinations 31 students passed the Practical Examination, and 23 were rejected. In Class A, 37 passed and 15 were rejected. At the Examinations in Scotland, in Class C, 31 passed and 19 rejected; Class B, 58 passed and 26 rejected; in Class A, 76 passed and 39 rejected.

The PRESIDENT said that Mr. Duck, one of the gentlemen who addressed the Memorial to the Council, was present, and if any members of Council wished to interrogate him he could be called up.

Professor WALLEY suggested that the Secretary should communicate with the Continental and Colonial Schools with a view of ascertaining what course was pursued by them with reference to their examinations, and that those parts of the prospectuses which related to the general question of examination should be translated at the expense and for the benefit of the College. He did not think the Council had a right to make any alterations in the examinations without giving due notice to the Schools. With reference to the report from the C Examiners, he should like to ask whether there was a specified time laid down in which the Examiners were to carry out their duties, and if they took up a longer time than usual they would be paid additional fees.

General Sir FREDERICK FITZWYGRAM thought the Council ought to gather the best information it could on the subject of examinations, and moved that Mr. Duck be heard.

Sir HENRY SIMPSON said he thought it would hardly do to permit Examiners to come and make their reports. Personally he should be glad to hear what Mr. Duck had to say, but he thought that it would be a waste of time to cross-examine and re-examine him on a certain subject. He did not think it was necessary that enquiries should be made from the Foreign Schools, for the system of examination adopted on the Continent was entirely different from the English system, and he did not think that if the prospectuses were translated any practical information could be obtained.

General Sir Frederick Fitzwygram having withdrawn his proposal, on the motion of Mr. KIDD the Report was received.

Mr. TRIGGER moved: "That the whole question of the Examiners' Reports as read by the Secretary, together with the Report of the result of Conference of Examiners and Principals of Schools, be printed, and a copy sent to each member of the Council."

Mr. J. F. SIMPSON seconded the motion, which was agreed to.

Finance Committee.

The SECRETARY read the report of the Finance Committee.

Mr. F. W. WRAGG moved, and Professor WALLEY seconded: "That the report be received and adopted, that cheques be drawn to meet the liabilities, and that a cheque for £20 for current petty expenses be placed in the hands of the Secretary."

The resolution was agreed to.

Fellowship Degree.

The SECRETARY read the report of the examiners for the Fellowship Degree, and stated that he was in correspondence with eight or nine gentle-

men who had indicated their intention of going up for the Fellowship examination.

Mr. J. F. SIMPSON pointed out that they had received no report from the Registration Committee, and hoped there would be an early meeting, as there was a large amount of business to transact.

The PRESIDENT: Mr. Hill will take it as an instruction that a meeting be convened at an early date.

Examiners for Fellowship Degree.

Sir HENRY SIMPSON proposed, and Professor MCCALL seconded, the re-election of Dr. Fleming, Professor Duguid, and Mr. Cox.

Mr. HUNTING proposed, and Mr. BURNETT seconded, the election of Professor Pritchard.

A ballot was then taken, and the President declared Dr. Fleming, Professor Duguid, and Mr. Cox to be elected.

Appointment of Committee for the Year. Chairman of all Committees, the President.

Mr. J. F. SIMPSON proposed: "That the Parliamentary Committee consist of the present members with the exception of myself, and that Mr. Hunting's name be added instead of my own."

Mr. W. HUNTING declined to serve.

Mr. TRIGGER proposed: "That so far as gentlemen on the last Parliamentary Committee are now members of the Council they now be re-elected."

The PRESIDENT: It is proposed, "That the Parliamentary Committee consist of Mr. Barford, Professor Brown, Mr. Cartledge, Sir Frederick Fitzwygram, Dr. Fleming, Mr. Greaves, Professor Penberthy, Sir Henry Simpson, Mr. J. F Simpson, Mr. Taylor, Mr. Whittle, and Mr. Mulvey."

Mr. HUNTING: I beg to propose that Mr. Raymond, Mr. Malcolm, Mr. Mason, and Mr. Trigger be appointed.

The gentlemen named were then elected.

General Purposes Committee.

Professor WALLEY: I beg to propose that those gentlemen at present on the Committee, viz., Mr. Barford, Sir Frederick Fitzwygram, Dr. Fleming, Mr. Greaves, Mr. Malcolm, Mr. Mulvey, Mr. Hunting, Sir Henry Simpson, Mr. J. F. Simpson, Mr. Trigger, Mr. Wragg, Professor Penberthy, Mr. Taylor, Mr. Whittle, be re-elected.

Messrs. Rymond, Wheatley, Edgar, and Fraser were added. The Committee, consisting of those gentlemen mentioned, was appointed.

Registration Committee.

It was proposed that those on the Council, viz., Dr. Fleming, Messrs. Greaves, Kidd, Malcolm, Mulvey, Professor Penberthy, Sir Henry Simpson, Messrs. J. F. Simpson, Taylor, Trigger, Whittle, and Wragg be elected, with the addition of Messrs. Fraser, Wheatley, Raymond, Hunting, and Mason.

The Committee was elected.

Bye-Laws Committee.

Mr. TRIGGER moved that the existing members, namely, Messrs. Barford, Cartledge, General Sir Frederick Fitzwygram, Dr. Fleming, Messrs. Greaves, Hunting, Kidd, Mulvey, Sir H. Simpson, Mr. J. F. Simpson, Professor Walley, Professor Williams, and Mr. Wragg be appointed on the Committee.

The Committee was appointed.

Finance Committee.

It was proposed and seconded that the existing members be re-elected. Messrs. Fraser and McCall were added.

The Committee was elected.

The Dinner Committee.

Sir HENRY SIMPSON moved that the Committee, consisting of Messrs. Cartledge, Hunting, Mulvey, J. Simpson, and Wragg, be re-elected.

Mr. HUNTING proposed, and Mr. WHITTLE seconded, as an amendment, "That the Dinner Committee be not re-elected."

The amendment was then lost.

Mr. MALCOLM moved that the name of Mr. Raymond be added.

Mr. J. F. SIMPSON proposed that Professor McCall's name be added.

Professor Penberthy was also nominated.

The Committee was then appointed.

Library and Museum Committee.

Mr. HUNTING proposed, and Sir HENRY SIMPSON seconded, "That a Library and Museum Committee be appointed."

Mr. J. F. SIMPSON said that a Committee still existed.

In reply to Mr. W. HUNTING,

Mr. THATCHER (the Solicitor) said that a Committee lived as long as the members of the Council composing it were in existence, and could be called together. Members of the Council went out at the annual general meeting. Some of them were members of the Committee, and it would be obviously incorrect for the surviving members to prepare to present a report which might be quite contrary to the opinions of the members who had gone off. When the annual general meeting came, and members of Council went out of office, the Committees expired of their own accord.

Mr. J. F. SIMPSON proposed, "That the members of the Library Committee be elected."

Mr. HUNTING said they had been told a year ago that by the bye-laws and charter the Committees would have to be elected by ballot.

Sir HENRY SIMPSON: If there was one gentleman proposed there could be no ballot, but if the election were questioned there would have to be a ballot.

The motion for the appointment of the Library and Museum Committee, consisting of Dr. Fleming, Sir Frederick Fitzwygram, Messrs. Hunting, Raymond, Edgar, Penberthy, Kidd, Mason, Burnett, and Nisbett, was carried.

The Charter Committee.

The PRESIDENT said he was advised by Mr. Thatcher that they ought to elect a Charter Committee. At present it consisted of the whole Council.

On the motion of Mr. WHITTLE, seconded by Mr. WALLEY, the Charter Committee was re-elected.

The Proposed New Charter.

Sir HENRY SIMPSON said he thought that there had been an impression that a certain number of the profession wanted a new Charter, and that a certain number did not want it. A certain section of the Council had not taken the trouble to give expression to its ideas on the subject. There had always been a desire for improvement on the part of the Council, but he thought there had been no inclination to swallow the whole of the points that had been insisted upon by the profession. The profession, without the slightest hesitation, had turned over their old and tried servants, and put in

gentlemen who, according to their own admission, were not tried. Mr. Malcolm had maintained that they should do as other bodies did, and elect their vice-presidents from among their own body. That was an excellent argument, but was not correct. There was no law whatever to prevent corporations from electing their aldermen (who were equivalent to their own vice-presidents) outside the Corporation. The profession had delegated to certain gentlemen of the Council the work of carrying through a charter and sending it to the Privy Council as soon as possible. He would not oppose their carrying any clauses they might think desirable, but he trusted they would send down a good charter.

Mr. MALCOLM explained that he had meant to say that aldermen in corporate bodies were always practically elected by the members, not that they had no right to elect them from outside.

On the motion of Mr. MULVEY, it was agreed that the clauses of the report of the Sub-committee should be discussed *seriatim*.

Professor PENBERTHY proposed, and Mr. J. F. SIMPSON seconded, "That every member of the College shall be eligible to be elected as a member of Council."

Mr. MULVEY moved an amendment, seconded by Mr. WHITTLE—"That the words 'or examiner' be added, and that the clause should read, 'That every member of the College shall be eligible to be elected as a member of Council or examiner.'"

The amendment was put and lost.

Clause 1 was then agreed to.

Mr. MULVEY proposed, and Professor WALLEY seconded—"That Clause 2, 'That the President and Vice-Presidents shall be selected from the elected members of Council, and that the number of members of Council be increased by eight.'"

Mr. F. W. WRAGG moved as an amendment, "That the number of members of Council be increased to thirty-six."

There being no seconder, Clause 2 was agreed to.

Mr. HUNTING said he did not wish to divide the meeting, but would suggest that a clause be inserted reducing the number of Vice-Presidents to two. They did not require six Vice-Presidents elected from among themselves. No other body in England had more than two Vice-Presidents.

Mr. MULVEY said it was not proposed to insert in the new Charter anything about Vice-Presidents. It was for the Council when it met to select its own Vice-Presidents.

Mr. HUNTING thought it must be mentioned one way or other, as it was in the existing Charter, or else they would go on with the six.

Mr. J. F. SIMPSON said that the profession was under the impression that the six Vice-Presidents would be appointed, therefore he should vote against Mr. Hunting's suggestion.

Mr. Hunting's motion was put and lost.

Mr. MULVEY moved, and Mr. FRASER seconded, "That Clause 3 be expunged.

Mr. TRIGGER supported the resolution because, although no one believed in pupilage more than he did, there was no safeguard for *bonâ fide* pupilage.

Mr. J. F. SIMPSON said that solicitors had power by charter to take pupils; in fact, no man could obtain his certificate and practise until he had produced his certificate of pupilage. Mr. Trigger was afraid that needy practitioners might take a large number of pupils, and make a business of it. The solicitors had seen the danger of that, and had made a rule that no man should take more than two pupils. There was the safeguard at once. He would not move an amendment, but thought that there was a way to make the pupilage clause a very excellent and useful one to the profession.

Professor WALLEY agreed with pupilage, and thought the clause perfectly safe as it stood. In the schools they impressed upon pupils the great necessity of seeing practice.

Mr. Mulvey's proposition, "That the clause be expunged," was carried.

Mr. MULVEY moved, and Professor WALLEY seconded—"That Clause 4 be not inserted," which was agreed to.

Professor WILLIAMS moved, and Mr. J. F. SIMPSON seconded—"That Clause 5 be inserted."

Mr. MULVEY thought that as they already possessed a degree of Associate, there was no necessity for electing Fellows in any other way than at present. He moved as an amendment—"That Clause 5 be expunged."

Mr. KIDD seconded the amendment.

Professor WALLEY agreed with Mr. Mulvey. He would never submit himself to any examining board for the sake of obtaining the Fellowship degree. He would propose that the Fellows should be elected by examination in the manner in which it has been already done, or by written thesis.

Mr. HUNTING suggested that although a man did not submit himself to anything like an examination at present, that should be brought in by altering the examination, as they had the power to submit them to whatever examination they thought fit. He suggested that we should alter the present examination, but that we should not make it easier.

Mr. J. F. SIMPSON asked for what purpose Mr. Hunting would alter the present examination.

Mr. HUNTING said that what Professor Walley desired could be obtained without any new Charter. They had the power to do what they liked for an examination, and a thesis was an examination.

Mr. J. F. SIMPSON said he should be extremely sorry to see the door shut against the Council, and so preventing them from conferring such honours upon an individual as many members desired at the present time. For that reason he seconded Professor Williams's motion.

Mr. WILLIAM EDGAR said that when the degree was started several gentlemen were admitted upon the list of Fellows without examination, and in the interests of young men who were better stimulated to greater exertions in their work with the idea of obtaining the degree he hoped that in future it would only be conferred upon examination.

The amendment was then carried.

Clause 5 was therefore expunged.

Mr. MULVEY moved, and Mr. J. F. SIMPSON seconded, that Clause 6 be inserted.

Mr. NISBETT asked if it were really necessary to stick to the month of May for the annual meeting. He thought members from the country would agree that it was a very busy time for country practitioners, and he suggested that it should be altered to the month of July or the end of June.

Professor MCCALL said that the month of May was very inconvenient for the principals of Colleges.

Mr. MULVEY said he had no feeling in the matter, and would be willing to substitute any month which might be agreeable to the Council. As London was the headquarters of the College he would move—"That the annual meeting be held in London only."

Mr. J. F. SIMPSON said that the month of May had had a trial with the profession for a great many years, and that they never failed to get a good meeting. With regard to the place of meeting he certainly knew that the intention of the Committee was that the Council should give members in different parts of the country an opportunity of attending the meeting.

Professor WALLEY said that they already had power to migrate, and he thought that the Council should leave the question as to the month open.

Professor WILLIAMS proposed, and Professor MCCALL seconded—"That the annual meeting be held on the first Wednesday in June."

Mr. TRIGGER proposed, and Mr. KETTLE seconded—"That it be held on the first Wednesday in July."

Mr. J. F. SIMPSON proposed, and Mr. HUNTING seconded—"That the clause remain as it is."

Mr. TRIGGER'S amendment was then put to the meeting and lost.

Professor Williams's motion—"That the annual meeting be held on the first Wednesday in June"—was then agreed to.

Mr. J. F. SIMPSON proposed that Clause 7 be expunged.

Mr. MULVEY seconded the motion, which was agreed to.

Professor WALLEY moved—"That Clause 8 be expunged." He most strongly objected to raising the fees to twenty guineas, as he did not see the object of it. They had a balance sent up to them by the secretaries from the two countries of not less than £850 for the last examination. It was simply taking money out of the pockets of the students.

Professor MCCALL seconded the motion.

Mr. MULVEY disagreed with the clause, but suggested a medium course, that the maximum fee should be fifteen guineas.

Mr. J. F. SIMPSON said that the intention of the Council was not that they should make an alteration in the fee at once, but they did not want to go to the Privy Council for a Charter every now and then; and therefore they wanted the power to raise the fees if necessary. He proposed—"That the clause remain as it is."

Professor WILLIAMS apprehended that many students had paid more than twenty guineas. He should like to know whether the Council had the power of charging students more than the sum mentioned in the Charter.

Mr. THATCHER said that a question had been asked by Mr. Wallace in the House of Commons some four or five years ago on that subject, and the answer given by the Lord-Advocate was that the College was entitled to do what it did. That ruling had been accepted by the House of Commons, and the matter passed off. He had always regarded that as a distinct and definite rule on the subject.

Professor WILLIAMS said in that case he should support Professor Walley's motion.

Mr. HUNTING asked if they were to understand that an answer given in the House of Commons was to be accepted as a judicial decision. He did not think it was of the slightest value whatever, except as a political move to get rid of the question for the moment.

Mr. THATCHER did not think that the Lord-Advocate would have condescended to state bad law.

Mr. HUNTING said it was not long since that the present Attorney-General stated that his remarks in the House of Commons were not legal statements. As long as they could make a large profit, and as long as the whole of their income was obtained from the students, he thought some little consideration might be given to them and to their parents. He would suggest that they had a sum fixed for each examination, except the one for which they now charged four guineas. That was quite enough to pay for an examination, and they would have another sum fixed for the re-examination of the rejected candidates of, say, three guineas. With regard to the argument that they were only putting a maximum, and that they need not carry it out, that was invariably brought forward whenever one wanted to raise the fees, but three months afterwards they always adopted the maximum fee.

Mr. MULVEY proposed that Clause 8 stand thus: "That the examination fees be fixed at a maximum of thirteen guineas, and that the examination fee for re-examination be three guineas additional."

Professor WALLEY said he should be content with that.

Mr. TRIGGER said they were going in for a new Charter, which they hoped would last a number of years, and he thought they ought to take power to charge what they thought to be reasonable fees.

The PRESIDENT thought that they would find in a very short time their examination expenses would be materially increased, because they would be compelled by public opinion to make them much more efficient and searching than they were now. He thought, therefore, it would be a good thing if in the new Charter they allowed a margin; they were not compelled to take the maximum sum, they could make it what they liked.

Clause 8 was then agreed to.

Professor WILLIAMS moved and Mr. CARTLEDGE seconded: "That Clause 9 do remain."

Mr. MULVEY moved as an amendment: "That Clause 9 be expunged, and that the following be substituted: 'That no member of Council shall be eligible to be elected as examiner, and *vice versa*.'"

Mr. KIDD seconded the amendment, which was put and carried.

Professor WALLEY said he was of opinion that there should be an additional number of examiners, and that they should have power to elect them. He proposed that they got powers to appoint an additional number of examiners, which if carried they would leave it till afterwards to determine how many.

Mr. WHITTLE seconded the motion.

Sir HENRY SIMPSON thought the motion was not at all necessary, the number was equivalent by Rule 19.

Mr. KIDD thought that members of the profession ought to be exempt from serving on juries, and he moved that such a clause be inserted in the new Charter. He would ask the Solicitor whether if such a clause were embodied in the Charter it would take effect.

Mr. J. F. SIMPSON seconded the motion.

Mr. THATCHER would not take the responsibility of expressing an opinion upon the point.

Sir H. SIMPSON suggested that Mr. Kidd, at the next meeting of the Parliamentary Committee, should move a resolution that a deputation should go down and see some members of Parliament, and ascertain whether there was any chance of their introducing such a Bill. The thing could not be done by Charter, but it might by Act of Parliament.

Mr. HUNTING proposed, and Mr. J. F. SIMPSON seconded—"That the Solicitor be instructed to prepare a draft petition for a new Charter embodying the resolutions carried to-day, and that he be requested to inform the Council of any other matters that he may consider called for by these changes."

The motion was agreed to.

Mr. EDGAR asked if the Council had power to add another year to the curriculum.

The PRESIDENT said it already had power to do so.

Memorial addressed to the President and Council.

Sir HENRY SIMPSON moved—"That the proposal for a joint conference and inquiry as suggested by the R.C.V.S. be accepted." Dr. Fleming had brought forward a printed report, signed by Professor Brown, the fourth paragraph of which contained the charges referred to in the memorial. He was perfectly astounded at those charges, for the statements were not founded on fact; and he had written to Professor Brown calling his attention to that, but had received no reply. He then proceeded to read letters from the Principals of the Colleges, expressing their approval of the manner in which

their examinations had been conducted. If the examiners had been guilty of any dereliction of duty they would have been found guilty, and so reported to the Council. With regard to the number of students examined, twenty were in the original report which was sent to every Governor.

Mr. CARTLEDGE said that there was power under the bye-law to provide substitutes, but he had not been content with that. He had written to all the examiners asking if they would object to the substitutes, and also to the President of the College, from all of whom he had received favourable replies.

Mr. J. F. SIMPSON corroborated all that Mr. Cartledge had said. With regard to the allegation as to candle-light, probably Professor Brown, from his limited knowledge of a country veterinary surgeon's life, could hardly believe that it was necessary for practitioners to visit patients by candle-light. He would ask Mr. Mulvey how much of his work was conducted by candle-light or by gaslight?

Mr. MULVEY: Four-fifths.

Mr. J. F. SIMPSON: Four-fifths. If he examined by candle-light is he to be condemned as an inefficient and unfair examiner? He did not believe that they would allow their examiners to be condemned unheard, and therefore he asked them to agree to the conference.

Mr. HUNTING wished to say that, when both sides desired an enquiry, one could not refuse it. It seemed a pity that when there was going to be a judicial inquiry one side of the tale should have been stated for the second time. Then, again, it had been brought forward at a meeting without notice by an individual who had obtained the information confidentially.

Dr. FLEMING said it was not.

Mr. HUNTING asked if a document sent to every member of the Board of Governors was not a confidential document. It was untrue it had been published, but Sir Henry Simpson said it had been printed and brought forward.

Sir HENRY SIMPSON pointed out that he said it was sent to every Governor.

Mr. HUNTING said it was circulated among the Governors, but not published. It was a private document, and had no business to be brought up. Now that that had been brought before the proper authority, the College itself, there was not the slightest objection to their taking the matter up, but he did object to statements having been made when Professor Brown was not present.

Mr. J. F. SIMPSON said that Professor Brown had a good opportunity of being there.

Mr. W. HUNTING said he did not think it was in good taste to bring forward a sort of testimonial of character from three of the Principals of the Schools.

Dr. FLEMING said that the document which had been sent to the Governors was in no way confidential; there was no obligation upon the receiver binding himself to secrecy.

The resolution was then put and carried unanimously.

Mr. WHITTLE proposed, and Professor WALLEY seconded: "That Mr. Barford, Mr. Wragg, and Mr. Greaves be selected to represent this Council in the inquiry."

Mr. W. HUNTING moved as an amendment, "That an important matter of this sort affecting the examiners be inquired into by the whole Council."

The original resolution was agreed to.

It was resolved that the sum of £30 be devoted to the entertainment of distinguished foreign men of the veterinary profession attending the Hygiene Congress, and that the matter be relegated to the Dinner Committee.

On the motion of Mr. MULVEY, seconded by Mr. WHITTLE, Mr. Simcock's resignation was accepted.

Obituary.

The SECRETARY read the obituary notice.

Professor PENBERTHY gave notice of the following motion: "That hospital details and management of animals be made a subject of the first examination."

Special Meeting.

It was agreed on the motion of Mr. MULVEY, seconded by Mr. RAYMOND, "That the regulations passed 7th January, 1891, as to the Matriculation Examination be rescinded, and that the existing regulations remain in force."

Mr. HUNTING proposed, and Mr. RAYMOND seconded, "That Bye-law 31 be altered so far as the first three lines ending at the word 'President,' to read 'A report of each examination, signed by the Chairman of each section shall be transmitted to the President and Council, stating the names of the successful candidates, the general standard of excellence obtained in each subject, and referring to any other matters which it is desirable should be notified to the Council.'"

SIR H. SIMPSON said he should like it to be made clear whether a copy of each examination was to be transmitted to the President and Council. He presumed they would not send it to individual members of the Council, but that a copy should be forwarded to the President to be laid before the Council. He hoped Mr. Hunting would see his way to take out the words "and Council," which would meet the case.

Mr. HUNTING said he would accept at once any amendment of that sort.

The resolution as amended was agreed to.

On the motion of Mr. J. F. SIMPSON, a vote of thanks was accorded to the President, and the proceedings terminated.

SPECIAL MEETING OF COUNCIL, HELD AUGUST 5TH, 1891.

Present.—Professor Penberthy, Sir Henry Simpson, Messrs. Barford, Fraser, Hunting, Kidd, Wheatley, Mulvey, Raymond, Wragg, and A. W. Hill (Secretary).

The SECRETARY said he had received a telegram from the President, Mr. Lambert, stating that he would be unable to attend the meeting, as he was absent from London.

Professor PENBERTHY moved that Mr. F. W. Wragg be asked to take the chair in the absence of the President.

Mr. MULVEY seconded the motion, which was carried.

Mr. F. W. WRAGG then took the chair.

Absentees.

The SECRETARY said he had received letters from Messrs. Greaves, Taylor, Nisbett, Mason, Blakeway, Walley, Trigger, Burnett, Edgar, and Malcolm regretting their inability to attend the meeting.

Minutes of the Previous Meeting.

Mr. MULVEY moved that the minutes of the previous meeting be taken as read and confirmed.

Sir HENRY SIMPSON objected to the confirmation of the minutes, on the ground that his resolution with regard to the suggested inquiry by the Royal Veterinary College had not been properly worded. He said that the part of the resolution which he had moved at the previous meeting, and which had been omitted, was as follows:—"That the subject for consideration be paragraph 4 of Professor Brown's report, in which he stated that twenty students were examined in one day last December; provided that the examiners whose conduct is in question, or one of them, be permitted to

attend the proceedings, but not to vote; and that the inquiry be held within the Royal Veterinary College." He begged to move that that be added to the minutes.

Mr. W. HUNTING said he had no recollection of those words. He should certainly not have voted for the motion if he had heard them; and until there was some proof that the meeting understood those words to be part of the motion, he should object to the minutes being altered.

Sir HENRY SIMPSON asked the Secretary if he had received the resolution in writing from him.

Mr. HUNTING said the President ought to have read the full resolution, which he apparently did not do.

Professor PENBERTHY moved that the matter stand over until the next quarterly meeting, and that in the meantime the matter be looked into, and steps taken to see if the original resolution could be found.

Mr. HUNTING seconded the motion.

Sir HENRY SIMPSON said there was this difficulty, that the resolution as recorded in the minutes might be acted upon at any time. Not only his conduct, but the conduct of other gentlemen had been implicated. It was a serious thing for any one to alter minutes, or to direct that a resolution should not be registered in the usual way. The Secretary was perfectly aware that the matter was placed in his hands in the form of a resolution, and he was equally aware that he had sent it to the President. The College was the depository for all official documents, and nowhere else.

Mr. MULVEY asked Sir Henry Simpson if he had handed in his resolution in writing to the effect that he had stated.

Sir HENRY SIMPSON: Yes.

Mr. MULVEY: Where is it?

The CHAIRMAN: The Secretary explains to me that he sent it to the President.

Sir HENRY SIMPSON said he wished the remainder of his resolution added to the minutes. He did not think any gentleman could possibly object to that, as no one would undertake to say what was not a matter of fact.

Mr. KIDD asked whether the minutes of any regular quarterly meeting could be confirmed at a special meeting. It was his own impression that they could not.

The SECRETARY said that it was usual to confirm the minutes at the next meeting, whether special or otherwise.

Professor PENBERTHY moved: "That the minutes of the last meeting of Council be confirmed, with the exception of that part which relates to the wording of the resolution by Sir Henry Simpson."

Mr. FRASER seconded the motion, which was agreed to.

The minutes as amended were then signed.

Alterations of Regulations and Bye-laws.

Mr. MULVEY moved the confirmation of the following alterations of Regulations and Bye-laws passed at a special meeting of the Council on the 23rd of July last:—

1. That the Regulations passed 7th January, 1891, as to the Matriculation Examination, be rescinded, and that the existing Regulations remain in force.

2. To alter Bye-law 31: That this Bye-law be altered so far as the first three lines, ending at the word "President," to read: "A report of each examination, signed by the Chairman of each Section, shall be transmitted to the President and Council, stating the names of successful candidates, the general standard of excellence attained in each subject, and referring to any other matters which it is desirable should be notified to the Council."

Mr. RAYMOND seconded the motion, which was carried *nem. con.*

The official seal was affixed.
The meeting then terminated with a vote of thanks to the Chairman.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

A MEETING of the above Association was held on July 16th, at the "Hotel Mont Doré," Bournemouth. The attendance was not a large one, the Royal Counties Agricultural Show at Portsmouth being held that week, together with other events, being the cause of a large number of absentees.

The members present were E. A. Hollingham, Esq. (President), Messrs. Goodall, J. T. King, Piesse, Pack and others. There were present as visitors, Messrs. Golledge, of Sherborne; Barrow, of Dorchester and E. W. Baker, of Wimborne; also Alderman H. Newlyn, Councillor H. N. Jenkins, and Dr. Nunn.

Letters of apology expressing regret for inability to attend the meeting were read from Sir Henry Simpson, Messrs. J. F. Simpson, C. Carter, J. D. Barford, T. Aubrey, F. Abraham, W. A. Edgar, also from the Mayor of Bournemouth, J. T. Hankinson, Esq., F. W. Lacey, Esq., (the Borough Surveyor) and Dr. J. R. Thompson.

Morbid Specimens.

Mr. T. B. GOODALL showed the skull of a weasel, with a collection of strongyles in the frontal sinus; the pressure from them had resulted in absorption of the bone, and their consequent protrusion as a bunch under the skin. Also some specimens of flies, amongst them being some forest flies (*Hippobosca Equina*), which he believed were peculiar to that neighbourhood.

The PRESIDENT said he thought they were all very much indebted to Mr. Goodall for these interesting specimens. He generally favoured them with specimens which other members might possibly have overlooked. The presence of strongyles in the nasal cavities, seemed to him unique, and it would bear much investigation to arrive at a true conclusion as to the life history of this parasite and the means whereby it obtained access to the location where it was discovered.

After remarks from Mr. Golledge and Mr. E. W. Baker, the PRESIDENT asked the meeting to accord a hearty vote of thanks to Mr. Goodall for exhibiting these specimens; oftentimes unconsidered trifles advanced knowledge more than the paths they were continually passing over, and it was not always the most elaborate subjects which most advanced general progress.

A vote of thanks was unanimously tendered Mr. Goodall, who acknowledged the compliment.

Messrs. C. Pack of Lymington, Tutt of Basingstoke, and Newman, of Havant were then elected members of the Association.

Mr. GOODALL proposed and Mr. J. T. KING seconded, that Mr. E. W. Baker, of Wimborne, be elected a member, and he will be balloted for at the next meeting.

THE CONSTRUCTION OF STABLES.

Mr. GOODALL next read his paper. In commencing he congratulated the Chairman on his recovery from recent illness, and spoke of the pleasure it gave him to see him amongst them that day. He then said :—

In the first place I beg to be allowed to tender my thanks to our President for the honour I feel he has conferred on me in asking me to prepare a paper for discussion; then I should wish to give expression to the pleasure it has afforded me to comply with that request.

The first difficulty that presented itself was, what subject to choose, for there are many that are occupying the minds of thoughtful men, and with which we should be interested; but it occurred to me that many of you gentlemen, in paying a short visit to a place like Bournemouth would like to

regard the day as a holiday, and spend some portion of the time in admiring the beauties of this most charming place, and when the mind is on pleasure bent, it would scarcely be reasonable to ask you to listen to a long discourse on any abstruse subject; I have, therefore, selected a topic which may be usefully discussed without the need of putting any strain on your mental powers, and it will be my endeavour to lay the outline for profitable debate in as few words as possible.

Our calling should be regarded as an honourable trust, for we are, or should be, banded together as one body for the purpose of waging war against the forces that induce the state we term disease in our domesticated animals.

A king who would make war with another king, would be deemed unwise if he did not first consider the strength and position of his adversary, and one of our first objects in this struggle should be to make ourselves conversant with the strong and the weak points of our adversary, so that we may know how and when to attack him with the best results. The term "disease" is but improperly understood, and is often misapplied. "Disease is a condition in which the functions of an organism are improperly discharged; in other words, it is a state which is physiologically abnormal, and threatens the life of the being or organ unless special means are taken to preserve it."

Both we, and our domestic animals are living in an artificial environment, and from Nature's standpoint are diseased, because unassisted we should be unable to resist the attacks of the lowest forms of organic life whose function it is to destroy or disintegrate the particles of matter that together constitute one of the higher organisms. From misuse or dis-use of the organs with which we, and our animals, have been provided by nature, our means of defence are weakened, and we lay ourselves open for attack on many points —as witness our own teeth and skins—the unwieldy fatted ox—the immaturely bred and artificially selected horse, and many other examples. These are some of the necessary evils attending civilization, and it should be the province of the practitioner of medicine to counteract, and as much as possible to lessen these evils.

One of our first considerations should be to make our foe's positions untenable; to leave him no place where, in the event of an attack, any of his forces may be ambushed; ready to spring upon us anawares after we may have repulsed the first attack.

A shelter that is particularly favourable to an ambuscade of this kind, is a stable constructed on a wrong principle; for, if once the attacking organisms gain access to a badly drained or badly ventilated stable, then, unless attention is given in the first instance to the hygienic surroundings, can they defy almost all our efforts to dislodge them. Let us but meet them on a more favourable field, and our task is comparatively easy. I had a good illustration of this in the recent epizootic of Influenza (Pink-eye). We found that the mortality was higher, and that the disease was most difficult to cope with, in crowded stables, and in stables that were constructed on bad hygienic principles. Where we found the disease in rural districts, or, in stables that had been constructed with some fore-thought as to the well-being of their future tenants, it was easily overcome, at least this was my experience.

It is commonly said that, as a rule, the English nation is prone to under-estimate the strength of a foe at the commencement of a campaign; this is often the cause of reverses which it costs many men and much money to rectify, and to recover our lost ground. This truism is equally applicable to the British public in this warfare against the forces inducing disease; how often do we find animals attacked again and again owing to their owners neglecting to take precautions which we constantly impress on them as necessary to remove the cause, it may be at some slight expense; until after the serious illness, or death, of a valuable animal, they realise their error, and rectify it.

It is not my intention to say much about those elaborately built stables with fittings and furniture that add much to the appearance and to the comfort and health of the horses that tenant them; for, though we sometimes see stables replete with every comfort and appliance, we must acknowledge that it is not the rule in the ordinary run of practice, but in ours, as in every pursuit in life, it is well to keep an ideal in view, and then by the exercise of a little thought and ingenuity, we may convert some of the worst of stables into at least habitable places, at small expense to the owners.

It will be my aim to give an outline sketch of the broad principles that are essential in the planning and building of any stable, be it great or small, for the comfort and health of the animals; and keeping this before us as an ideal, we may let health, light, and comfort into some of those miserable holes that are, often through ignorance, considered by many as good enough for the habitations of their horses.

General Construction.

The site should always be a dry one, and should not be crowded in by any buildings that may obstruct a free circulation of fresh air through the stables.

The aspect should be S.W.—particularly is this advisable in the infirmary boxes, because, firstly, we have the sunlight, which is in itself one of the best of health-restorers, streaming into the stable all day; secondly, the doors and windows may be left open during the prevalence of the coldest N. and N.E. winds, and they may be so constructed that on the hottest day a horse may be able to stand in the shade; for, if the box is 14 feet square, the doorway is 4 feet and the window is 3 feet 6 inches wide and 6 feet from the ground, then a horse can stand in a shady corner, with the door wide open, and a delicious cool breeze may be playing round the box. In the summer-time the glass is painted over with lime, to which a little archil has been added, which gives a nice, cool blue effect, and prevents absorption of the heat. One little hint, even in this simple matter, is useful: the application should be put on the outside of the glass, for if the bright glass is left in contact with sunlight it absorbs heat.

My ideal stable should be at least 12 feet high, higher when practicable, but it should never be less than this, and if we allow at least 12 feet square for a loose box in a working stable, and a stall 10 feet long and at least 6 feet wide, with a passage space behind of at least 6 or 7 feet, we have a cubic space per horse of about 1,440 cubic feet, which is about sufficient.

In building infirmary boxes, they should be 14 feet square, and rather more lofty than the working stables, giving a cubic space per horse of something over 2,000 feet.

In laying the floors and foundations, a great deal depends upon the character of the soil in which we intend to build, but in most soils, chalk excepted, it is advisable first to take out some 2 feet of the mould, and this space should be filled in with "rubble," broken bricks, mortar, etc., which should be thoroughly rammed in; over this there should be 6 inches of good concrete, and then the whole paved with one or other of the vitrified bricks, or with the patent granite concrete. If, as in some tradesmen's stables, expense is an object, and objection is taken to the paving, then we must be satisfied with the rubble and concrete.

In chalk districts one of the best and healthiest floors, particularly for agricultural and tradesmen's stables, where appearances are not studied, is chalk rammed well down, and changed periodically for fresh. It is an excellent absorbent, and the horse does not slip on it. I have seen this used for racing-stables, and I have had it brought from a distance to replace old floors in certain cases, where, from long usage, or illness, they have become foul, most excellent results have followed its use.

In planning out the paving of a stable, consideration must be given to the drainage plan. If for surface-drainage, which I think is best, then the floor should be paved so that the sides of a stall or box are as nearly as possible level, there should be a slight fall from the sides to the centre of a stall, and then a fall of about 2 inches down the centre of the stall to the back. In a box there should be a slight fall all round towards the centre, and then a fall of a gutter-way from the centre to the main drain of the stable, on the same principle as the drain of the stalls. The floors of the stable should always be above the ground-level, *i.e.*, the level of the ground outside. If we have underground drains, the floors of the stalls and boxes may be level round the sides, with the fall to the centre, where the trap should be.

I think hollow walls are the best. If built of brick they should be 4½ inches outside wall, and 9 inches inside, I am sure this keeps the walls dry, and keeps the stable cool in the summer and warm in the winter. If the walls are properly built there need be no fear of vermin harbouring in the space. It is needful to see that a damp course is properly laid.

The doors should be four feet wide "in the clear," and from seven to eight feet high; they should always be divided into two, an upper and a lower, and *all stable doors should be made to open outwards*. This I find one of the greatest difficulties in having done—as a rule it spoils the *features* of an architect's plan, and, therefore, as is not at all unusual in other phases of life, comfort is sacrificed for appearance. The reasons that can be adduced for this kind of opening are many. For instance, the increased space on the inside of the stable—just take the circle of a four-feet door as it swings on its hinges, and notice the space that is needed. Or we have a loose box in the stable, and we want to bring a horse out, the loose-box door opens *out*, and the stable door *in*, it is a matter of screwing a horse "in and out" to get an exit, for of course a "box" door must open *out*, or what would happen, as I have seen it, if a horse was cast against the door?

Again, we have not always the most careful men in charge of horses. A horse is left when being groomed, or when he is having his saddle or harness put on—the door is ajar, he makes a rush for his liberty, the door closes by his pressing it to with his hip, and the consequence is a very serious accident—whereas, if the door opened *out*, he would have gained the yard without accident, and it would simply be a matter of catching him again. For infirmary boxes we must have the doors to open *out*, for the horse is left with the upper door open, and who is there among us who has not seen accidents through loose horses biting and rubbing against the door that opens *in?*

In working stables the height of the lower door should be about four feet. For infirmary boxes, or where the horse is allowed a box opening directly to the air, the lower door should be three feet nine inches. General Fitzwygram, in "Horses and Stables," recommends three feet six, but in practice I have found this a little too low. There should always be a catch on the wall so that the doors may be fastened back—this prevents them being blown about in a windy day.

The doorways of a stable in which a number of horses are to be kept in stalls should, when practicable, open at the *ends* of the stable. When this cannot be done, and the door must be situated behind the horses, the stall that is directly opposite the door should not be occupied; it should be utilised for the storage of the corn-bin, or for harness, or chaff-cutter, or some such purpose. This precaution is seldom taken in agricultural, cab, or 'bus stables; and who has not had the experience in the majority of cases of illness that a professional man is called upon to attend in such stables, it is the horse opposite the door that is the sufferer? This is easily accounted for. These stables, as a rule, are not too plentifully supplied with appliances for ventilation, and the drains and floors are, generally speaking, not of the

most perfect type. The horses are shut up close for the night in such an atmosphere, and in the *early* morning, often frosty and very cold, the carters are in attendance to feed, and to clean out the stables; the door is either left open, or is being constantly opened and shut, admitting a blast of cold air directly on to the horse standing opposite. He cannot get away, and the result is, one of many forms of illness. If the stall opposite the door is not occupied by a horse, the incoming air may, by a little boarding, be so directed as to diffuse itself well over the stable.

I have known serious accidents to occur through young or fresh horses being placed in loose boxes with the upper door open, from their attempt to jump over the lower door; there should therefore be bars fitted to all such doorways. These bars should be of tubular iron 1¾in. in diameter, and so fitted that the horse cannot work them out of position. It is advisable to have them not more than six or eight inches apart, so that the horse cannot get his head between them, or he is very liable to inflict an injury to the poll if, from fright or other cause, he withdraws his head suddenly.

Much after-expense and annoyance to an owner is saved if every portion of woodwork that a horse can reach with his mouth is, at the outset, well covered with zinc; it prevents bad habit as well. I have known a horse to bite through a wooden partition 1½ inches thick, and the whole had to be renewed after about three years' wear. This also is my reason for advising tubular iron bars, in preference to angular wooden ones. It is said of the *genus homo* that "Satan finds some mischief still for idle hands to do." We may say of the horse that is laid up without anything to do, that he cannot keep out of mischief with his mouth, and if he can find a piece of wood anywhere about his box he will bite, and this habit will often be the harbinger of crib-biting, therefore we must try to leave no corner or woodwork in a loose-box in which an idle horse is to be kept.

The windows cannot well be too large or too plentiful; but for a stable where we are just studying health and comfort I would have windows from three feet to three feet six inches square, those that have a sunny aspect should be either glazed with ground glass, or painted, or frosted over on the outside with lime and archil. One of these windows, in a stable of any size, should be placed opposite every alternate stall-post, and then each one gives light and ventilation to two stalls. When it can be had, perpendicular light is best, but all stable windows should be fairly high, the lower edge of the window five or six feet from the ground. They should open either by a pivot in the centre, so that the upper part shall fall *inwards*, or they should be made to hang by a hinge either on the bottom or half-way down, so that the window in either case opens *inwards*, and the *incoming* current of air is directed towards the ceiling. This is of great importance in ensuring effective ventilation. All windows should be made to open; and in loose-boxes they should be protected by upright iron bars. I have known a horse put his foot through one. The windows of infirmary boxes should be hung by the *upper* edge, and be made to open from the lower part *outwards*.

Ventilation.

It was my original intention to give details of the composition of pure air, and compare with that the air of some stables, but I find all that quite impossible to bring into the time and space of such a paper as this; just one or two remarks must suffice.

The air on the floor, or close to the floor of a stable, contains more carbonic acid gas than it does higher from the ground.

In nature, by the law of diffusion, and by the action of minute living organisms, and other means, impurities are prevented from accumulating to such an extent as to be injurious to health, but when man interferes, and

boxes his animals closely up, and prevents the action of Nature's purifiers and scavengers, then the balance, so essential to healthy animal life, must be overthrown.

When we think of the enormous surface of the lungs of a horse exposed to the action of the air (15½ times the surface of the skin), and how quickly absorption takes place from this surface, we can see that we ought to give more attention than is our wont to this question, and to insist that the air coming in contact with this surface is rendered as pure as possible.

In insisting on the free ventilation of stables, there is one point on which I always rely to make clear my argument with architects, builders, or others who may be interested. Stables require very much more ventilation than human habitations, because a horse has all his excreta (urine, fæces, etc.) on the floor of the room in which he is confined, it is analogous, or worse, to our being shut up in a W.C., hence the need of *low* ventilation, and of scrupulous cleanliness as to the drains and floors of a stable.

With these prefatory remarks, let us see how we can best insure the free ingress of pure, and exit of foul air from our stables.

It is impossible to enter into all the arguments advanced in such books as Fleming's, Fitzwygram's, Smith's, Stewart's, etc., but in addition to the windows, which I have already explained, I would, particularly for a large stable, have a louvre along roof; this allows the heated, foul, impure air to escape. I would also have over each horse's head, whether in a stall or box, either a ventilator on the principle of Sherringham's valve, or a "hit-and-miss," as it is termed by builders, 9 in. by 6 in., and under each manger, a foot from the ground, I would have a ventilator of the same size. Where there is a passage behind the horses, I would have a large low ventilator at each end- 9 by 6 outside, and 14 by 9 inside; this funnel shape diffuses the air well through the stable. The face of this ventilator through the wall should be made as smooth as possible with cement; if there is any roughness it is surprising how soon dust and dirt accumulate. If it is smooth the current of air carries with it all the floating particles.

My reason for high and low ventilation is—and I have proved it time after time—that the cold outer air *comes in* at the lowest part. It carries with it the carbonic acid gas and other impurities that are present most in the lowest strata of air in the stable, and as the air becomes heated it rises and carries the disease-inducing elements out through the higher openings. There is no draught from this plan of ventilation, but a constant current circulating round the stable. If you have the high ventilators only, the hot air of the stable keeps expanding and rising and some escapes; then there is a periodical vacuum and *down draught*—any one can test this who stands under a ventilating shaft in a closed stable that has no low openings. But in the plan I have outlined, if there are bars across the openings of the ventilators, there are no draughts, the hand may be held a foot or two from the low opening and the incoming current can scarcely be felt, but there is a constant imperceptible circulation, diffusion, and purification of the air. By having these low ventilators at each horse's head, the pure air comes in where it is most wanted, and where it is taken direct to the surface of the lung. In many stables there is plenty of fresh air behind the horse, but it is close, foul, and impure where the horse is inspiring it.

If I were asked to plan a stable in which a number of horses required for work in all weathers were to be kept, I should advise a high airy place with peerpendicular light, ventilators such as I have described, large doors at each end, and the horses standing with their heads *towards a central gangway*, and a space behind the horses to take them in and out of their stalls, and for cleaning out, etc. Or I would have a gangway between the mangers and horses' heads, and the wall. The wall should be freely ventilated; in

either of these positions the horses would always have a circulation of fresh air to inhale. The mangers would be the same as now in use, and there would be the same conveniences for tying the horses securely; but how much better would such a stable be for combating the forces inducing ill health than when the horses are standing for days with a volume of foul, stagnant air under and around their heads. I would recommend this plan to the attention of our military brethren.

In infirmary boxes, I would advise a high and and a low ventilation, such as I have described, on opposite sides of the box.

Drainage.

I consider open surface drains by far the best, they can always be kept clean, and the master can see for himselt if anything is wrong. The only argument I know against them is the appearance, but I am one of those old-fashioned people who deem it folly to sacrifice the risk of health, or comfort for the sake of appearance. Do you tell me the stable is not so sweet? Don't believe it; the closed drains that are out of sight, no matter how well they are trapped, must get "coated over" in the course of time, and the gases emanating from them, in spite of all cleanliness, will find a way into your stable. Don't you know how the floor, and a surface drain, have to be scrubbed to remove the sediment? In a closed drain this must remain. Bnt where a closed drain has been decided on, I would impress upon all of you the necessity for *personal supervision* of the laying of these drains. "Out of sight, out of mind," and an architect may submit to you the most perfect "plans," drains "trapped" and "ventilated," but he has to rely on the contracting builder, and he may leave it to his men; and when once it is covered over who can say whether it is according to plans and specifications or not?

(*To be continued.*)

EASTERN COUNTIES VETERINARY MEDICAL SOCIETY.

THE summer meeting of this flourishing association, which was established twenty-three years ago for the elevation of the professional and social status of veterinary surgeons, the vindication of their medical and pecuniary interests, the preservation of honourable conduct amongst the members towards each other in the practice of their duties, and for the advancement of veterinary science generally, was held in Lynn for the first time on 7th August, under the direction of Mr. W. Bower, M.R.C.V.S., of East Rudham, the president. Amongst the members who attended were Messrs. T. Auger, of Wymondham, R. S. Barcham (honorary secretary), of North Walsham, J. R. Gooch, of Holt, J. Hammond, jun., of Bale, R. Howard, of Thetford, F. Low, of Norwich, J. D. Overed, of Blofield, E. Margarson, of Swaffham, W. Shipley, of Yarmouth, S. Smitb, of Lowestoft, and Jas. Thurston, of Fressingfield, MM.R.C.V.S., and A. H. Santy, F.R.C.V.S., Gaywood. There were also among the visitors Prof. Penberthy, F.R.C.V.S., Royal Veterinary College, London; Messrs. W. J. Beart, of Lynn, F. Case, of Swaffham, G. Wills, of Rudham, E. Case, of Fakenham, all MM.R.C.V.S.; E. H. Leach, of Newmarket, and F. E. Gooch, of Stamford, FF.R.V.C.S.; Dr. Manby, Messrs. C. Clubb, T. Rathbone, and E. Hendle, of Rudham; A. Lewis, of Heacham, J. Anthony, of Sedgeford, W. Harvey, of Fakenham, W. Nicholls, of Lynn, etc. The proceedings commenced shortly after noon at the Globe Hotel, by the Chairman presenting letters, regretting inability to attend the meeting, from Mr. J. D. Lambert, F.R.C.V.S., president of the Royal College of Veterinary Surgeons, and Principal Veterinary Surgeon for the Army; Dr. Fleming, F.R.C.V.S., Prof. Pritchard, R.V.C., Prof. Axe, Prof. Walley, Principal of the Veterinary College, Edinburgh (Dick's); Prof. Williams, Principal of the New

Veterinary College, Edinburgh; Prof. Duguid, of the Privy Council Office; Prof. McCall, Principal of Glasgow Veterinary College; Messrs. Hunting, F.R.C.V.S., London; T. Greaves, F.R.C.V.S.; J. Cleveland, of Bungay, W. Dickinson, of Boston, F. Hewson, of Royston, A. E. Dalby, of Docking, C. E. Carter, of Guildford, M. A. Baker, of Wisbech, members of the R.C.V.S.; Sir Henry Simpson, Windsor, F.R.C.V.S., Veterinary Surgeon to Her Majesty the Queen; Messrs. Wragg, of London, and James Simpson, of Maidenhead, FF.R.C.V.S.; and Dr. C. B. Plowright, of Lynn.

The PRESIDENT, in his inaugural address, said: Gentlemen, my first duty is to thank you for the honour you have conferred upon me by electing me to the presidentship of this association. I esteem it a great honour. I know that you have not given me this position for any service I have done, or for any superior professional abilities. I conclude, therefore, that it is a mark of respect for the plain practitioner who has tried to do his duty in his district to the best of his ability. It is an honour, then, that any of us may look forward to if we simply do our duty and if we treat our professional neighbours in a manner which establishes mutual respect. No one has a higher respect for the scientific man than I have, but we cannot all be theorists. Most of us must be content to remain practical men, and I am of that class. The every-day work required of us leaves little time to devote to theory, but I venture to say that there are many of us who do not forget the broad principles we learned at college, and who honestly endeavour to keep in touch with the advance made by men of science. These societies are great helps to busy men, for every member who introduces a paper assists us to more fully understand the subject brought forward. Each meeting suggests something to think about, and gives us some new idea which we may apply in practice. Each meeting also enables us to exchange views on other topics besides the scientific ones. It encourages us not to be apathetic about our profession, and it enables us to see our own weak points and the strong points of others. I do not know anything which has contributed more to professional unity, to good feeling and general progress, than these societies, which are now spread all over the country. I do not, however, intend to enter further into these matters to-day, and I cannot presume to make my short address instructive on any scientific subject. I propose very shortly to say a few words on one or two topics of great interest to us all; and first, of the proposed new charter. You will all have seen that at the last meeting of the Council a charter was agreed to and the clauses approved. Every member of the profession may now look forward to become a member of Council if his fellow-practitioners think him worthy to fill the office. This I think is a move in the right direction. The Fellows still retain the sole right to be elected as examiners, and perhaps this may not be objected to when all the holders of the Fellowship degree are really men who have shown by examination that they have devoted extra attention to the science of their profession. For my part, I do not object to the Fellows retaining this one position of honour, because they ought to be the best men in our body, and we must always select examiners from our best men. The next clause alters the election of vice-presidents, so that in future no man will be able to be a member of Council until he has been elected to it by the whole profession. This change I also approve of. The next clause alters the month of the annual general meeting from May to June, which I think will be a more convenient month for all country practitioners who wish to attend. Clause 4th gives the Council power to raise the fees for examination, which may be necessary if it is intended to increase the time of the examinations or the number of examiners. The last clause abolishes the dual appointment of members of Council and examiner. This is also a change which I think right. Of course I see that

it may prevent some man from occupying both positions who is really good enough for the two; but such men are rare, and we can generally find some one as good to fill one of the positions. The chief benefit of the change is that it prevents men on the Council electing themselves or their friends to all the places of honour. There is one clause I am sorry to see not placed in the new charter. I hoped that we should have had a compulsory pupilage. I am a believer in pupilage, and I do not think a man can become a good practitioner who has not in his younger days done the work of a pupil in a good practice. I do not think our colleges can supply the training that a pupil receives with a good practitioner. It is not only the various cases that a pupil sees that trains him; he is taught to use his hands and eyes in many ways that cannot be taught at college. Besides, he sees the different animals in their own natural positions; he sees them in health as well as in disease; and there are some things that he can only see in practice. The pupil also obtains experience of the rough work of practice, and he is brought into daily contact with the clients as well as the patients, so that he learns manner and tact, which are not obtainable in any other way. The argument against compulsory pupilage is that there is no guarantee that young men might not go to bad practitioners or to men without any practice. This is a strong argument, and I am not prepared to say how it could be guarded against; but I do think that the intelligence of our Council might have surmounted it by a little careful consideration. I notice, however, with pleasure that it was said by the teachers at the meeting that they all advised their students to go and see practice whenever they could. Perhaps if the teachers recognise the value of pupilage, it may become quite the exception for men to get their diplomas until they have passed some time with a practitioner. I hope this will be the rule, for nothing is more injurious to the profession than young men with diplomas exhibiting to the public their ignorance of elementary details of practice. I hope, gentlemen, the new charter may soon become law, and that its omission to provide a compulsory pupilage will not be found to be a mistake. There is another subject I must say a word about. In a few days an international congress of hygiene will be held in London. One section is to be devoted to the diseases of animals communicable to man. This is a question in which veterinarians are as much interested as medical men, and it is our duty to show that we are capable of giving assistance which cannot be obtained from any other class. We recognise the diseases of animals, we know the nature of these diseases, and they come under our notice before anyone else sees them. We do not claim to possess any greater skill than the human surgeon, but we do claim from training and experience to be able to recognise disease in animals and provide for its treatment and prevention with greater skill than the man who is a comparative stranger to it. The living animal may communicate diseases to man, and so may flesh and milk. It is here that the medical and veterinary sanitarian meet, and both have their proper place in preventing the spread of disease to man. Our clients are the owners of animals, and great injustice may be done them by erroneous accusations of disease originating amongst men from the products of the stock-owner. Flesh and milk may certainly convey disease, but the recognition of the disease in the animals ought to be our special sphere. We should like to work with the medical officers; we should like to assist them in every way we can; and when outbreaks of human disease occur which are supposed to be traceable to animals, we only await the opportunity of being invited to assist in discovering the origin. At this hygienic congress, I hope the veterinary profession will be well represented, and that we may be able to show conclusively that our knowledge and assistance are essential in any well-regulated schemes for protecting man from the diseases of domesticated animals. One more subject I must allude

to. You all know that a memorial is being established to the late Professor Steel; some of you knew him better than I did, and I therefore need not, if I were able, say anything of his personality. I am only concerned with his work and his example. He worked for his profession more than for himself; he added to our literature, and he endeavoured always to arrive at the truth. In raising a memorial to Mr. Steel, the profession desires to perpetuate not merely his memory but his example. It is desired to make the memorial a form of prize, to stimulate young men to devote more time and attention to scientific work, and thus give greater prominence to the necessity of always trying to understand each case we see and arrive at some greater certainty in the treatment we adopt. In subscribing to the Steel Memorial it should be remembered we not only honour the man but we assist our profession in its onward progress. And now, gentlemen, I will bring my remarks to a close. I have obeyed the custom which requires your president to give some inaugural address, but I hope that is the least of my duties. I hope that during my term of office our meetings will be well attended, that many interesting matters will be brought forward, and that when I retire it may not be said that the society has suffered. It depends more upon you than upon me, but I feel certain I shall have your support, and with that I fear no failure.

Mr. SANTY, in proposing that the Society vote ten guineas to the Steel memorial fund, said they were all agreed that Mr. Steel was a worthy man, and an ornament to their profession, and he was sure they need not look about much to ascertain something of the great benefit which he had been to societies of this kind.

The VICE-CHAIRMAN (Mr. J. D. Overed, of Blofield) said he fully endorsed the remarks of Mr. Santy. Their deceased friend, Mr. Steel, was a bright ornament to society as long as he lived. He was cut off in the prime of life and in the midst of all his labours, which were abundant; and he (Mr. Overed) considered that the memorial was worthy of their support and recognition. He seconded the proposition, which was unanimously carried.

The CHAIRMAN said the next business was to elect delegates to the International Congress of Hygiene and Demography, which would open in London on Monday next, and he read a letter from Sir Henry Simpson, veterinary surgeon to Her Majesty the Queen, offering his services as one of the delegates and to pay his own expenses.

Mr. SANTY said there was no reason why they should not elect two or more delegates. Sir Henry Simpson had done them the honour of submitting his name, but he (Mr. Santy) thought that first of all they should honour their President by electing him a delegate. He was sure they could not send a better man to the congress than Mr. Bower, and he proposed that he be elected.

Mr. JAMES THURSTON seconded the proposition, which was carried unanimously.

The VICE-CHAIRMAN proposed that the Society should vote two guineas to the congress, which would enable them to send two delegates in addition to Sir Henry Simpson.

Mr. R. HOWARD seconded the motion, which was agreed to, and Mr. W. Shipley was elected the second delegate. Sir Henry Simpson's services were also accepted.

Upon the proposition of Mr. SANTY, Mr. E. H. Leach, of Newmarket, was elected a member of the Society.

Various morbid specimens of interest to the profession were then minutely examined, after which the President invited those present to an excellent luncheon, served by Mr. S. N. Marshall. The President next took his friends for a drive to Sandringham, where, by permission, the fine stud of thorough-

bred horses were inspected and their pedigrees explained by Mr. Walker. Next the stables, the dairy farm, the harness-rooms, and the carriage houses were visited, then the gardens and the neighbourhood of Sandringham House, after which the party walked across the park, inspected the church, and returned to the highway, where they resumed their carriages, and drove back to Lynn with pleasant recollections of an hour or two spent upon the Prince of Wales's estate.

At the Globe hotel, at six o'clock, a *recherché* dinner, with dessert and wines, was in readiness, and much enjoyed. The tables were prettily ornamented with cut flowers, plants, etc. Mr. W. Bower occupied the chair, and Mr. J. D. Overed the vice-chair. After dinner, the CHAIRMAN proposed the usual loyal toasts, which were enthusiastically received.

Professor PENBERTHY said he had performed lots of pleasant duties during his life-time, but he thought these had now come to a climax, for he had been asked to propose the health of their President, Mr. William Bower. It was with the greatest pleasure that he introduced the toast, for several reasons, which he would not attempt to give. They were going to have short speeches that evening, and so much was known of the intrinsic worth of their President that little need be said of him. He was a most excellent gentleman, a generous host, a good veterinary surgeon, and a capital friend to all present. Outside the ordinary course of speech-making, he need not say anything to make this toast tell upon all present. They had had ample proof of Mr. Bower's thoroughness and geniality; and his efforts were so highly appreciated by all present, and he occupied such an important position in the county of Norfolk, that it relieved all strangers of any doubt as to his great ability and skill. He (the speaker) asked the company to be upstanding and to drink to the health of the President in a bumper and with musical honours. The request was enthusiastically responded to.

The CHAIRMAN said he was exceedingly thankful for the kind manner in which his health had been proposed and drunk, but he thought more had been said of him than he deserved. This had been one of the happiest days of his life. It was a long time before he could see his way clear to accepting the presidency of their Association, and he only took it upon two conditions, the first of which was that he should be allowed to hold a meeting in Lynn, and secondly that his friend Mr. Low, of Norwich, should succeed him. He was pleased to be in front of Mr. Low in the presidentship, because if he was as hard to beat in the president's chair as he was over a country he would never be able to follow him. He was pleased to see so many of his friends present at that meeting; at the same time he could but feel regret that some were absent who had promised to come, and who had been detained at the last moment by reason of various circumstances. He rejoiced to know that their society was progressing, and as long as he had anything to do with it he would do his best to further its interests.

Mr. SANTY said that by the President's request he had to propose "The Professional Visitors," which was never omitted, he believed, at gatherings of this kind. No society, whatever its grade or description, was carried out successfully without having visitors present at their convivial board. They had with them eminent professional visitors whose fame as veterinary surgeons was known far and wide, and they were also favoured with the presence of Professor Penberthy, of Mr. Leach from Newmarket, and of their fellow townsman, Mr. Walter Beart, all of whom were well known throughout the country, and he was sure they were all cordially welcomed to that meeting. He had pleasure in associating with the toast the names of Professor Penberthy and Messrs. Beart and Leach.

Professor PENBERTHY, in reply, said he was absolutely incapable of expressing his feeling with regard to the hospitality which he had received that

day, and trusted that at some time or other it would be repeated, for a more pleasant day he could not have had, and when he said this he believed he was only speaking the sentiments of everyone present. These little sweetnesses of professional enjoyment proved very acceptable. He considered that the President of their Society had done him a great honour in inviting him to this meeting, and he would leave Lynn with pleasant memories of his visit to the Eastern Counties Veterinary Medical Society.

Mr. W. J. BEART said he could fully endorse all that had fallen from Professor Penberthy, and thanked him for his remarks.

Mr. LEACH thanked the Society for the very kind reception it had given him, and for the way in which it had treated the visitors. They had had a most pleasant day, and never before, as far as he could recollect, had their business been so happily associated with pleasure.

Mr. F. LOW, in proposing "The Royal College of Veterinary Surgeons," said that since he passed his examination in 1886 he had not been near the College, and perhaps had not taken that interest in it which other members of the profession had done, but he was glad to see the progress that was being made, and that the profession was being year by year more recognised by the public as a scientific institution.

Mr. SANTY, whose name was associated with the toast, in responding, said Mr. Low had referred to the fact that their profession had made enormous strides during the past thirty years. When he passed in 1859 he could remember that he did not possess the privilege which some people enjoyed in the present day of having a couch and an easy-chair provided for him by his clients contiguous to the sick box. Nor, when he was called to treat diseased animals was he invited to the best room in the house of his client, as he was proud to say was frequently the case with his professional brethren in the present day. To what was due the change which had taken place? It was due to the enormous amount of energy and perseverance displayed by the the profession individually and collectively. The public found that scientific and practical knowledge which members of the profession possessed was conducing to the general well-being of animals entrusted to their care, both in health and disease. There was a generai advancement, both as regards the student of veterinary medicines and his teachers, and greater facilities for learning at the various veterinary colleges. The Royal College of Veterinary Surgeons now possessed a very fine freehold building, in which they examined their students, held their council meetings, and conducted their general business. These were not all the changes which had taken place, for the veterinary profession was frequently called upon to assist the sister profession in eliciting the causes of occult diseases which affected both man and the inferior animals, and *vice versa*. They were also invited to be present and to take part in the discussions of scientific bodies. Anyone who had accompanied their Association to-day could not have failed to notice the respect with which their President and Mr. Beart and the members of the Society were received. The veterinary profession would go on gaining confidence and respect so long as its members respected themselves by showing an honesty of purpose and a strict adherence to duty.

The CHAIRMAN proposed "The non-Professional Visitors," amongst whom he said were several staunch good friends of his whom he had known for many years. He regretted that Mr. Alfred Lewis and Mr. John Anthony, those well-known breeders of the Norfolk hackney, had been compelled to leave the meeting in order to catch a train homewards, and he would associate with the toast the name of Mr. Harvey and Mr. Nicholls.

Mr. W. HARVEY said he thought a great compliment had been paid the non-professional visitors by inviting them to meet a lot of professional gentlemen. He was certainly pleased to associate with their President at all

times, and especially had it been a pleasure to do so that day, because everything had passed off so pleasantly. Every professional man admitted that Mr. Bower was worthy of the position which he held, and it was gratifying to know that he had been so highly honoured.

Mr. NICHOLLS said he looked upon the veterinary profession as something wonderful. The veterinary had to do with a dumb animal, which could not tell its ailment or give indication of the kind of treatment it required. It was not so with the medical man, for his patient could generally tell something of his affliction, and half assist the doctor in prescribing the necessary remedies. Years ago the veterinary profession was not looked upon in the same favourable light as it was to-day, and it was only as the outside public met them and learned more of their researches and intelligence that such a change of circumstances could be anticipated. He was proud to meet those present, and he regarded it as an honour which he little expected to be invited to join with them. He had the pleasure of knowing their President for many years, and of always regarding him as a sincere friend—a friendship which he trusted would be extended as long as they lived.

Mr. THURSTON proposed "The Ladies," for whom Mr. LEACH replied, and Mr. LOW gave "The Press," for which Mr. W. SPARKES returned thanks. The meeting then broke up, several of the party being compelled to catch the 10.20 mail train.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting and Dinner of this Society took place at the Victoria Hotel, Manchester, on February 6th.

There were present: The President (Mr. A. Leather, of Liverpool), Professors Young (Dean of Owen's College) and Williams; Messrs. Jamieson (*Liverpool Courier*), Spencer (*Manchester Guardian*); W. Cross (*Naturalist*); Crownshaw and Dear (Liverpool); Moore (12th Lancers); W. F. Greenhalgh (Hon. Sec., Yorkshire V.M.A.); Greaves, Peter and W. Augustus Taylor, Hopkin, Wolstenholme, Dacre, Shore, Lloyd Jones, Faulkner (Manchester); A. M. Michaelis (Stockport); T. Briggs (Bury); E. S. Gubbin (Glossop); W. Hall (Royton); and the Secretary. Apologies regretting their inability to be present were received from Drs. Fleming and Barron, Professors Lewis, Walley, Axe, W. O. Williams, McCall, and Brown; Messrs. W. Hunting, J. D. Lambert, John Armstrong, W. Whittle, W. F. Wragg, T. C. Toope, and others.

Proposed by the PRESIDENT, seconded by Mr. PETER TAYLOR, that Mr. R. Roberts, M.R.C.V.S., of Liverpool, be a member of this Association. Carried unanimously.

On the motion of Mr. GREAVES, seconded by Mr. PETER TAYLOR, it was resolved that Mr. Wm. Whittle, of Worsley, be adopted as the nominee of this Association at the forthcoming election of Council; and in connection with this subject, Messrs. WOLSTENHOLME and GREENHALGH spoke of the desirability of candidates for the Council laying their views before the profession.

The PRESIDENT having announced the sad news of the death of Mr. Wm. Woods, sen., of Wigan, Mr. GREAVES rose, and after paying touching tribute to the memory of his deceased friend and colleague, proposed that a letter of condolence with the family be sent from this Association. This was seconded by Mr. PETER TAYLOR, feelingly supported by Professor WILLIAMS and Mr. BRIGGS, and carried unanimously.

The PRESIDENT also alluded to the bereavement (by the loss of his wife) that had recently befallen Mr. T. C. Toope (President of the Yorkshire V.M.A.), and requested the Secretary of that Society to convey to Mr. Toope the assurance of our sympathy.

The PRESIDENT (Mr. A. Leather, F.R.C.V.S.), then delivered the following inaugural address:—

Gentlemen,—My first duty on taking this chair is to thank you for the great honour you have done me in electing me your President. I accept the position with some doubts as to my capacity, but with none as to my intentions and earnestness in carrying out the duties of the office. I cannot help knowing that I follow in the steps of men of greater capacity and of greater attainments, but I am sure none of these entered upon their duties with a graver sense of their responsibilities or more fully determined to do their best to conduct the Association successfully.

These associations every year become more and more important professional bodies. They guide the politics of the profession, they have a great part in the selection of our Council, and they perhaps do as much as all our books and teachers in keeping alive a desire for knowledge and also in spreading information concerning all new discoveries in science. Our associations are the meeting-place of practitioners, where we interchange ideas, where friendships are formed, where explanations can be made and misunderstandings cleared up. They are the very best institutions to bring about unity, and we all know unity is strength. To be President of one of these associations is an honour, and I cannot help thinking one of the most legitimate ambitions for every practitioner. None of us need be too modest to aspire to it, and none of us need fancy he is too great for the position. The little man may trust to the members to help and assist him, and the great man may find sufficient scope for his very best talents. I look to you for assistance.

It is customary on these occasions for your President to take a general view of any subjects of importance to the profession, and I shall not be departing from custom if I shortly draw attention to what I consider a few most important matters. I shall not attempt to force my opinions on the meeting, but if I happen to differ from any gentleman I hope that he will believe that I am open to conviction, and am prompted only by good motives.

Some new departures have been made recently in the work of associations. The National has set aside a sum of money annually for scientific research. The Central has offered a prize for students to encourage dissection. The Midland has undertaken an experimental enquiry into Black Quarter. All these actions seem to me to be progress in the right direction and worthy of imitation. We practitioners cannot do laboratory work, and the science of pathology has now arrived at a stage when the clinical observation of the practitioner must be supplemented by the experiments of the scientist.

Practice and science more than ever must work together if we are to progress with medicine and surgery. The veterinary profession is poor, and it has very few opportunities for its members to attain great skill as scientific investigators. By working together and by pecuniary assistance we may be able to strengthen this weak spot; and in time, by our own efforts, to establish places and men who will do for veterinarians what Pasteur and Koch and Lister have done for science and pathology generally.

This Association was one of the first to practically show the value of co-operation between the human and veterinary practitioner. Mr. Wolstenholme's paper on Parturient Apoplexy was discussed here by representatives of both branches, and I am sure we were all assisted and enlightened by the discussion. Every year it becomes more evident that comparative pathology can only make sound advance by the assistance of all classes interested in it. The human and animal pathologist must work together, and they must be assisted by the chemist and biologist. Veterinarians, I am bold enough to claim, have not been much behind, but we must make greater efforts if we

intend to march in line with other professions. There in no standing still—we must either keep up with the advancing tide of progress or fall behind.

For the proper treatment of disease we must understand the nature and pathology of the cases which come under our hands. The experiments and researches of scientific men must be known to us, and when they offer us any discovery, which they have good reason to believe is valuable, we must test it in practice. No matter how well an experiment works in the laboratory, its ultimate test of value is in practice. Vaccines for Tuberculosis, for Pleuro-pneumonia, for Black Quarter, for Small-pox, or for any other disease must be submitted to wide practical experience before they can be accepted with confidence.

And this brings me to the most recent scientific discovery—Koch's remedy for Tuberculosis. To us, as veterinary practitioners, it is not of the same importance as to human surgeons; we do not look for "cures" of contagious diseases as so essential as prevention. In man a cure for Tuberculosis would rank as a blessing equal to any discovery yet made in the arts or sciences. In the lower animals it would also be valuable, but our efforts can be more surely and certainly directed to prevention by isolation, separation, and stamping out.

There is, however, about Dr. Koch's discovery a remarkable peculiarity; even if it does not cure it assists diagnosis, and if it behave the same in the systems of animals as in man it may be of the greatest utility to veterinarians in assisting us to diagnose tubercle in the earliest stages. Our Council has determined to test this point if they can obtain lymph for the purpose. I think their action, even if it err on the side of hastiness, is a sign that they keep our interests in view and that they are observant of the times.

The line of work Dr. Koch has pursued in the production of his remedy for Tuberculosis will be followed up now by many workers, and other diseases in which a specific organism is the cause will be investigated. It is not too much to expect that in time vaccines may be produced which will either cure or prevent many, or perhaps all, of our contagious diseases.

In preventive medicine we have another wide field in which veterinarians are greatly interested and in which they must work side by side with the human practitioner.

It is our duty to master all the diseases of animals transmissible to man. We must cure them if we can, we must prevent their spread if possible, and, at any rate, we must so act as to render their transmission to the human being as rare as possible. Tuberculosis, Rabies, Anthrax, Glanders, and Actinomycosis prevail amongst animals, and they are all communicable to man. It is our duty to battle with these diseases in animals, and all the light shed upon them by the other profession we should appropriate. We also should offer our observations and researches for their assistance.

Even if the contagious diseases of animals were not communicable to man they would still be one of our most important studies. They cause immense loss, and that we are expected to prevent. The Board of Agriculture has no duties of greater importance than the prevention of those diseases, and our profession takes a prominent part in advising and carrying out the means best suited for this purpose. Cattle Plague was stamped out, Foot and Mouth Disease was also eradicated, Pleuro-pneumonia is now being attacked in a systematic and thorough manner never before attempted, and I am sanguine enough to believe that in two or three years it will be successfully exterminated. Rabies is legislated for, but only in a half-hearted way. No provision at all exists against its repeated importation into this country, and regulations are enforced in one country but not in the neighbouring one. This method of action may be successful locally, but it can never rid the kingdom of the disease. Fresh outbreaks will occasionally appear, first in one place and

then in another, to be followed by the imposition of restrictions. Thus the public become disgusted, and in time resent all regulations as simply useless.

And now, gentlemen, if I am not wearying you, I should like for a few minutes to turn from scientific matters to professional ones.

There is a proposal before the Council for a new Charter and every one now seems to consider it necessary. But no one wants the trouble and expense of getting a Charter except for its provisions, and consequently it behoves us all to agree about the changes it is to bring. The profession has been unofficially consulted, and has expressed a very decided opinion on three important points. It is not right for us to be silent on this subject, but we must speak out so that our representatives may be certain of our wishes. Although I am a Fellow I do not think I should suffer any loss by allowing every member to take his seat on the Council if elected to it. Nor do I think such a change would injure the Fellowship, but would rather do good by removing a cause of dislike, and thus lead to increased unity amongst us all. I do think, however, that all members should support a higher degree, and make it really a mark of progress. To such Fellows as pass the extra examination required I would confine the privilege of acting as examiners.

I also agree with the proposal to prohibit the dual appointment of councilman and examiner. We have plenty of man in the profession to fill all these places without asking one man to act on both. It is wrong in principle—so long as examiners are appointed by the Council—that men should be candidates for the paid office whilst they are members of the body entrusted with the appointment.

The vice-presidents are now elected by the Council, and have the same voting power as the members of Council elected by the whole profession. I think every one of our governing body should be elected directly by the profession at the annual balloting, and then from these the Council might select its best men as vice-presidents.

The recent discussion on our practical examinations for the diploma and for the Army, coupled with the complaints made by the practitioners of the deficiencies of many diplomad assistants, shows that something is wrong either in our teaching or examining. Practical knowledge is most essential, and it becomes a question whether in our New Charter any further provision can be made for ensuring it. Pupilage with a first-class practitioner is the place to gain practical knowledge, and if no other plan is successful we must have compulsory pupilage. The difficulty is that this is not certain to be effective. A man may be a pupil and learn nothing, so we must not be too hasty. It is worse than useless to enforce a course which is supposed to be educational, but which may prove delusive. If the Royal College enforces pupilage it must do so in a manner that will protect its own dignity, and do justice to parents and guardians. A voluntary pupilage is quite unobjectionable, because it leaves the pupil or his guardians to select a good practitioner, and does not *compel* him to spend time and money. When the body corporate interferes with liberty of action it must be more or less responsible for the value of the course it insists on, and therefore must have some rule by which to insure that pupilage is not a farce.

Other professions offer us some guide. Solicitors and accountants have a compulsory pupilage, but they do not allow any of their members to take more than two pupils at a time. The Medical Council do not enforce a pupilage, but they allow a portion of the last year of study to be passed with an approved practitioner. How can we "approve" a practitioner? It is a rather invidious task to disapprove of any man, but we must acknowledge that there are men with whom a compulsory pupilage would be not only loss of time, but a serious misfortune to the lad submitted to his guidance.

I am convinced that we had better not have compulsory pupilage unless it

can be safe-guarded against being made merely a term of idleness, or worse still, a school of bad practice and loose habits.

I should have liked to refer to the present outbreak of Influenza, but I have already detained you too long. I shall therefore ask you to allow me to introduce the subject at some future meeting when time for discussion may be available. I have only now to thank you for the patient hearing you have given me; to ask you to ponder well any of my remarks which you may consider worthy of consideration; and to give me your best assistance in maintaining the dignity and usefulness of this Association during my year of office.

On the motion of Mr. HOPKIN, seconded by Mr. WOLSTENHOLME, a hearty vote of thanks was accorded to Mr. Leather for his interesting address.

The members and friends afterwards dined together when an interesting toast list was gone through, and this social function was rendered still more enjoyable by well executed songs and recitations by Messrs. FAULKNER, DEAR, and LLOYD-JONES.

G. GARTSIDE MAYOR, *Hon. Sec.*

The usual quarterly meeting of the above Society was held at the Blackfriars Hotel, Manchester, on the 11th of March.

There were present:—Mr. Arthur Leather (President), Professor W. Owen Williams, Messrs. Thomas Greaves, Peter and W. Augustus Taylor, Hopkin, Wolstenholme, Locke, Faulkner, and Shore (all of Manchester); Whittle, Worsley; Eastwood, Northwich; Dale, Chorlton-cum-Hardy; Bennett, Leigh; Blackhurst, Broughton; Woods, Wigan; Armstrong, Accrington; Roberts, Liverpool; and Gartside Mayor (Secretary), Kirkham.

Mr. WM. WHITTLE thanked the members for the honour they had done him in again proposing him as a Member of Council.

Mr. W. AUGUSTUS TAYLOR gave notice that at the next meeting he would bring forward the question of the employment of a shorthand reporter at the ordinary meetings.

Morbid Specimens.

The SECRETARY then brought before the meeting the bladder of a two-year-old filly from which he had removed a peculiar substance almost a year ago (exhibited at a previous meeting). The walls of the bladder were enormously thickened and rough in appearance, and various speculations were offered as to the cause of the condition.

The PRESIDENT referred to the fact that when a portion of the calculus (?) was submitted to microscopical and chemical examination at the Liverpool School of Medicine, it was thought that it must have been introduced from without; this idea was quite in accordance with the Secretary's report that there were traces of laceration about the neck of the bladder at the time of his first seeing the case.

Prof. W. O. WILLIAMS said that the museum of the New Veterinary College contained a specimen of a bullock's bladder presenting similar appearances, but there was no history attached to it.

Prof. W. O. WILLIAMS then read the following paper—

HOW TO MAKE POST-MORTEM EXAMINATION.

MR. PRESIDENT AND GENTLEMEN,—It gave me much pleasure to receive an invitation to come to Manchester to read a paper before your most influential Society. I trust that the subject-matter will be of some little value to those present, and will give rise to discussion and suggestions as to improvements in my methods and opinions. I must say before commencing that there are several things which I recommend but which I seldom employ, at the same time occasions do arise when I *do* employ these methods.

In making a perfect *post-mortem* examination, there are at least three different methods to be adopted.

I. By making a naked eye or *macroscopical* examination of the various parts and organs of the body.

II. By the *microscopical* examination of portions of tissues, either in a fresh or a prepared condition.

III. By attempts to inoculate artificial media, or even other animals, with some of the tissues, so as to cultivate, if possible, any special pathogenic germ which may have been present and which may have caused the disease.

It is hardly possible in the majority of cases to come to a really satisfactory and definite opinion as to the cause of death, unless, at least, the two first methods are employed.

I now propose enumerating the various appliances with which every establishment should be equipped, so that its veterinary surgeon will be able, when necessary, to make such a perfect examination that his evidence and proof in a law-court will be unassailable :—

One or two large skinning knives, one or two small knives for making careful dissection of important parts, a couple of strong hooks, a pair of dissecting forceps, a pair of scissors, a saw, a chisel, a lever, a hammer, bone forceps, a pair of India-rubber gloves in cases of Glanders, Rabies, Anthrax, etc. ; a pair of snow-shoes or goloshes, or boots which are used for no other purpose ; a bottle of carbolic oil or solution of corrosive sublimate, and a packet of salt to make into solution, so as to dress any wounds which may be on your hands ; a wide-mouthed bottle containing spirits of wine, in which to place any portions for future microscopic examinations ; a bottle in which to carry away ingesta suspected of containing poison ; a small box with two or three slides and cover glasses in it, on which to place and dry a little blood for rough microscopic examination.

I think you will agree with me that with this formidable array of material one should be able to make a very perfect *post-mortem* examination, but I would add another item, and that is nutrient gelatine in tubes, a spirit lamp, and a platinum wire, with which to inoculate the gelatine with pieces of the body, so as to try and cultivate germs.

Now, being thus prepared for any emergency, we will proceed to the place of the *post-mortem* and will discover the following facts before commencing.

(1) Age, colour, sex, and marks of identification.

(2) Whether it died or was killed and bled.

(3) How long dead, and on which side it died.

(4) See if there are any discharges from the orifices, or swelling of the parts.

Now the next thing is whether you are personally going to perform the *post-mortem*, or allow someone else to do it while you look on. There are many difficulties which prevent an ordinary practitioner from doing it himself. He has clients to meet, patients to see, and a *post-mortem* all in the same morning, consequently if he makes it himself he will smell of the knackers—and perhaps convey disease into healthy stables. So in the majority of cases he is quite justified in appointing a junior who understands instructions to do the manual part of the work, whilst he, the senior, gives orders, takes notes, and also keeps clean.

We are now in a position to commence work, and I shall confine myself to giving a description of a *post-mortem* in a horse.

(5). Secure the animal on its back.

(6). Skin the animal if the hide is of value, and you don't suspect contagious disease.

(7). Examine for bruises, etc.

(8). Make an incision from the zyphoid cartilage along the linea alba to the pelvis, carefully open the abdominal cavity, and see if the caput cæcum is in its normal position. Next see if the bowels exposed to view are much distended with gas—this is of importance, as often after death gases accumulate in them to such an extent as to cause rupture of the diaphragm.

Also see if they are covered with particles of food or dung—this usually indicating rupture of stomach or bowels whilst animal was alive.

Observe if fluid be contained in abdominal cavity, also indicating rupture of organs or dropsy.

Now carefully lower the animal to its side, remove the abdominal muscles from the upper side, and allow the bowels to fall out.

The bowels should be a pale yellowish colour, but may be green from decomposition, red from peritonitis, black from gangrene and twist, or bright yellow from osmosis from liver after death.

They may have patches of ecchymoses from Anthrax or from Purpura. Some portions may be intussuscepted or others again be in a condition of hernia and gangrene.

Occasionally we find a calculus, a fœtus, or tumours lying independently in the abdominal cavity.

Next remove the stomach and bowels from the cavity, and examine for ante-mortem ruptures of them. These are recognised by having thickened, ragged and congested edges in contradistinction to ruptures occurring after death from over distension by gases, or accidental ruptures due to a slip of the knife.

Examine the stomach for ulcers, atropy, bots, calculi, worms, or foreign bodies, or hæmorrhage. Then the pylorus for stricture; the bowels for strictures, inflammation, ulcers, parasites, calculi, and foreign bodies generally.

The pancreas weighs about seventeen ounces, but in old horses may be much atrophied.

We next remove the liver. Take note of its weight, which should be about eleven pounds. In colour it should be livid, should have sharpish edges, and be easily cut with the knife, neither too gritty nor too buttery.

Next we may examine the spleen, which in health weighs two and a half pounds, and is azure blue externally, and a deep purple when cut into. It should cut softer than liver.

Passing from there to the kidneys—the right one weighs twenty-seven ounces, and the left one twenty-five ounces. On section the cortex should be of a red-brown, and the medulla a pale yellow.

These again may be found too large or too small, and one may contain a calculus, which sometimes has caused such atrophy of the kidney, that hardly anything remains but the capsule covering the stone, and hence sometimes the condition is erroneously called calcification of the kidney.

The bladder must be examined for inflammation of its mucous membrane, thickening of its wall, and for calculus.

Examine all arteries and veins for disease.

The ovaries in the mare for tumours, cysts, etc. The uterus for sundry diseases.

Having thus pretty well exhausted the abdominal cavity we next proceed to the thorax.

Saw the sternum through from cariniform to zyphoid cartilage, next saw through the ribs as near the backbone as possible, taking care not to injure any of the organs within. You can now see inside, look for fluid; lymph; adhesion of lung to ribs; fluid in or thickening of peri-cardium.

Next cut through trachea, and remove lungs and heart from chest. Examine heart sac for pericarditis, the heart, which should weigh about seven pounds, for enlargement, for aneurism of auricle, for fatty or calcareous deposits, for petechiæ. Inside examine for thrombi, clots, ulcers, abscesses, and diseased valves. Examine large blood-vessels for diseases, aneurisms, etc.

Next observe the lungs. In a bled animal they should be red in colour—in an unbled they will be purple; and the one on the side the animal died will be affected with hypostatic congestion. This may be confounded with true congestion due to disease. Observe if the lung floats in water, if its pleura is clean and shining. Look for abscesses, consolidations, inflammations, exudations and injuries. Then examine bronchial glands for abscesses.

Now open the trachea and examine it for pus, blood, froth, thickened membrane and injuries to its rings. Open the bronchial tubes and search for similar things, also parasites, and foreign bodies such as food or medicine.

Make a careful note of the condition of the larynx—whether its mucous membrane be diseased, or whether its muscles be atrophied or not. Look for abscesses or inspissated pus in the region of the throat.

Examine the tongue for injuries.

Look into the nostrils and sinuses of the head for ulcers and diseased bone or discharges; also for polypi.

And lastly, open the cranial cavity and examine the brain, which should weigh about twenty-three ounces, for thickened membranes, hæmorrhages, exudations and tumours. And finally the cord (10½ ounces) may be examined for thickened membranes or induration of its substance.

This then is a general outline of how I would suggest *post-mortem* should be made. The second and third methods are to be continued in the laboratory.

Discussion.

Mr. Peter Taylor confirmed what the essayist had noted in regard to the necessity for care in the preliminary observations in *post-mortem*, and spoke of the wisdom of having a brother practitioner with us in cases likely to lead to any trouble.

Mr. Thomas Greaves, after complimenting the reader, proceeded to remark on the frequency of diseased liver in plethoric animals, and with Mr. Taylor spoke of the difficulty of saying how long a time many diseased conditions might, or might not, have been in developing. This point was also referred to by several other speakers.

Mr. W. Whittle referred to the fact that Professor Williams' recommendations were almost precisely identical with those of Professor Dick.

Mr. Hopkin referred to the fact that not very infrequently we meet with cases which do not present any recognisable *post-mortem* lesions.

Mr. W. Augustus Taylor very pertinently drew attention to the extreme value from an educational point of view of finding ourselves wrong in the diagnosis.

Mr. Locke said that the essayist's suggestions were very valuable in the case of animals which died unexpectedly.

Mr. Faulkner emphasised the fact that *ante-mortem* rupture of the diaphragm was not an infrequent condition.

After Professor Williams had replied, Mr. Faulkner proposed, and Mr. W. A. Taylor seconded, that a hearty vote of thanks be accorded to Professor Williams for his kindness in coming amongst us, and to the Secretary for exhibiting the morbid specimen.

The usual vote to the Chairman concluded the meeting.

G. Gartside Mayor, *Hon. Sec.*

Army Veterinary Department.

Gazette, July 28th.

Veterinary-Surgeon Richard William Burke, F.R.C.V.S., to be Veterinary-Surgeon, First Class, ranking as Captain.

In the *London Gazette* of August 18th, permission has been given by Royal Licence for R. G. Griffith, Army Veterinary Department, now attached to the Egyptian Army, to accept and wear the Order of the Osmanieh, Fourth Class, conferred on him by his Highness the Khedive of Egypt.

Obituary.

The death has been announced of R. Laidlaw, M.R.C.V.S., at Albany, New York, United States, where he had been in practice for a number of years. Graduating in 1840, he went to the United States in 1860, and after travelling for some time through that country, finally settled at Albany.

The death is reported of J. McDougall, M.R.C.V.S., Helensburgh, who graduated in 1867; and of C. Middlehurst, M.R.C.V.S., Manchester, a graduate of 1872.

Notes and News.

London's Daily Milk.—Thirty thousand pounds a day is the estimated cost of the milk consumed by Londoners. During what is known as the "season," when fashionable folk are in town, more than £2,000 worth of cream is consumed daily. Some of the milk used by Londoners comes from country districts 150 miles away. Twenty thousand people are engaged in selling the milk. A few years ago London milk was delivered at houses by Irish and Welsh women, who wore short petticoats, heavy boots, and carried two cans suspended from a wooden yoke. These have been almost entirely superseded by the familiar long, low, and chariot-like carts, and also by carrier tricycles. Three quarters of the milk used in London is doled out in pennyworths and halfpennyworths. In addition to the £30,000 worth of cows' milk, £200 worth of goats' and asses' milk is used for invalids. Hospitals are the best customers. The milk bill of one London hospital amounts to £7 10s. per day.

A Prolific Sow.—Mr. Joseph Hedges, farmer, of Walton-in-Gordon, has in his possession a sow which has had four litters of pigs, namely, fifteen, twelve, twenty, and fourteen, making a total of sixty-one.

Diphtheria.—Dr. P. Haushalter discusses (*Rev. Med. de l'Est*, May 15th, 1891), the question whether the spontaneous "diphtheria" observed in poultry is etiologically identical with human diphtheria. He found that membranous affections, sometimes of a very benign character, were extremely common among domestic poultry bought in the market of Nancy. These membranes yielded cultivations of a bacillus which Dr. Haushalter considers to be, without doubt, specifically distinct from the bacillus of human diphtheria. The poultry bacillus grows freely at 18° C., its contour is uniform, it is found in the blood of affected animals, and it is less lethal when inoculated subcutaneously than the Klebs-Loffler bacillus. Dr. Haushalter, however, accepts the statement that poultry can be infected with human diphtheria. Such being the case, he recommends careful prophylactic measures in any infective disease of poultry characterised by membranous exudation, namely, isolation of the infected animals, killing of animals seriously ill and burning of their bodies, burning of straw, etc., soiled by the birds, and disinfection of the hands of the attendants.

KOCH'S TUBERCULIN.—It is reported from Baden that the experiments made with Koch's tuberculin, at Karlsruhe, by the Ministry of the Interior, have encouraged further experiments by the Agricultural Association in Mannheim. Out of twenty-two animals vaccinated with the lymph on June 9th, four showed signs of reaction. The temperature of these rose from 39° (Celsius) to 41·2°; quickening of pulse and respiration set in; there was loss of appetite, and erection of the hair. When slaughtered, the four were found to be tuberculosed, while the eighteen were entirely free from the disease.

SUPPOSED FOOT-AND-MOUTH DISEASE IN THE UNITED STATES.—There are over 1,000 cattle sick in Des Moines County with an extremely severe form of Foot-and-Mouth Disease, which has been declared epidemic, and a quarantine has been established against the county.

RABID WOLVES IN RUSSIA.—The Odessa correspondent of the *Levant Herald* gives an alarming account of the increase of Hydrophobia in Southern Russia. He says:—During the months of June, July, and August in each year since the establishment of a Bacteriological Station in this city the number of hydrophobic patients treated have shown a threefold increase. The average daily number of persons brought to the Odessa station who have been bitten by rabid animals is ten, and at the present moment sixty indoor patients are under the Pasteur treatment. Among these are persons bitten by rabid dogs, cats, wolves, horses, cows, and two cases of bites by a pig and an ass affected with Rabies. The alarming spread of Rabies in this country is chiefly effected by the wolves. The ferocious and indiscriminate attack of a single rabid wolf is more fatally dangerous than the onset of twenty mad dogs, which are more easily disposed of. There are at present eight patients, brought here a few days ago, suffering from the most dreadful bites and lacerations of the same rabid wolf. Five of these cases will in all probability prove fatal. When the bites are inflicted about the head and face there is very little hope for the victims, the circulation of the poison in the brain arteries being very rapid. The virus communicated by the bite of a rabid wolf is not more intensive than that of a mad dog, but its action in the system is more rapid. Even when the victim is bitten on the hands, legs, or arms, the Pasteur system is seldom efficacious unless the patient be placed under the inoculatory treatment within forty-eight hours; and this is, of course, frequently impossible where patients are brought from great distances. As an instance of the peculiar ferocity of rabid wolves, I may briefly describe the case of the eight patients mentioned above. On the evening of the 13th of July three young peasants, with a horse, were returning to a village lying on the fringe of a forest near Winitza. Suddenly a rabid wolf sprang from the covert and attacked the horse. The three boys, armed with sticks, rushed upon the wolf. Two of them were bitten in the affray, when a blow from a stick momentarily stunned the wolf. The boys immediately climbed a tree for safety, when the wolf sprang after them, seized the lowest by the foot, dragged him to the ground, and tore the flesh in a dreadful manner on his face, hands, and arms. On his companions descending the tree to his assistance the wolf retired to the forest. On the opposite side of the village, the following day, some young girls were tending a herd of cows in the meadows, when the same wolf rushed upon the cattle, biting three or four of them. A girl-herd named Dimitrikowa, thirteen years of age, and armed only with a stout stick, pluckily attacked the wolf, which savagely turned upon her, threw her to the ground, and inflicted twelve serious wounds before her companion, a girl of the same age, named Merteniak, came to her assistance. This poor child suffered in the same way, when her mother and a twelve-year-old brother came upon the scene, attracted by the children's cries. Both mother and son received the same dreadful treatment from the rabid animal. The

cries of the victims and the brilling of the cattle had by this time attracted the peasants from the village, who rushed into the field armed with cudgels and hay-forks. The wolf for some minutes stood its ground, and only retreated to the forest after wounding three of its assailants. Four of the peasants, however, followed the wolf into the forest, and, though the night had already fallen, eventually found it, and after a lively struggle it was despatched by Subenko, the village smith, after he had been twice bitten in the hand. The patients brought the wolf's head with them to the Bacteriological Station, where an examination of the brain proved the animal to have been rabid. As I have already said, five of the patients are not likely to recover from the horrible effects of the injuries, and even the other three cases are more or less doubtful, as it was seven days after the occurrence that these unfortunate people reached Odessa. I have said enough to show what fearful havoc a single rabid wolf can spread. The only remedy would appear to be in the hands of the provincial authorities and Zemstvos, who might offer adequate inducements for the wholesale destruction of the wolves during the winter months, when the peasants' field labours are suspended.

RABIES IN ASSES.—Canine Rabies is stated to have been prevalent of late near New Ross, Co. Wexford, and the disease appears to have spread to other animals, asses particularly being affected. A mad ass a few days ago attacked and killed a little girl, mangling the head and shoulders in a frightful manner.

A TEST FOR GLANDERS.—It is reported from Dantzig, that District Veterinary Surgeon Preusse recently tried some experiments upon horses thought to be suffering from Glanders. A liquid containing the bacillus was injected, when the temperature of the body rose to 41 and 42 deg. Celsius; healthy animals, on the other hand, showed no signs of Fever. As is the case in Tuberculosis, the animals, when slaughtered, were found to be affected with the disease in proportion to the rise in temperature. The circumstances of the discovery have been laid before the Ministry of Agriculture, and it is hoped that great benefit will be derived therefrom.

Correspondence.

THE EFFECTS OF MANGE.

SIR,—In the case of the Royal Society for Prevention of Cruelty to Animals *versus* Sewell, reported in the June number of the VETERINARY JOURNAL, a considerable difference of opinion appears to exist on the question "If an animal can become so emaciated from the effects of Scabies as to cause death, or get into such extreme debility as to justify destruction, or if such cannot take place." I have more than once seen this happen. Amongst the large numbers of animals that are collected together after any military expedition, Mange is one of the most common diseases that is likely to break out. And after every one of the campaigns that I have served in, both on the North, West, and Eastern frontiers of India and in Zululand, I have always found that several animals, suffering from Scabies, have got into such a debilitated state that they have either died or had to be destroyed. These animals have been properly treated, and not only fed under proper supervision, so as to ensure their getting their usual ration of food, but they have in most cases had an extra quantity given them.—Yours,

JOSHUA A. NUNN, A.V.D., F.R.G.S., F.R.C.V.S.
Principal, Lahore Veterinary College.

June 29, 1891.

RETAINED PLACENTA, FOLLOWED BY PROLAPSED UTERUS AND VAGINA, IN A COW.—CHLOROFORM.—RECOVERY.

SIR,—The writer under the above heading in your Journal of August last, has evidently had very little experience in the treatment of "prolapse of the uterus," as practised by veterinary surgeons, or I am sure he would not accuse the profession of using great barbarity in such cases.

For his future guidance in such a dilemma, I beg to refer "A Surgeon and Justice of the Peace" to "Fleming's Veterinary Obstetrics" (Baillière, Tindall, and Cox), page 570 to 604, a careful perusal of which will assist his common sense a great deal.

JOHN GEORGE CROSS, F.R.C.V.S.

CRUELTY TO ANIMALS.

DEAR SIR,—In your last issue, under the correspondence, I note a letter from "Alpha," headed "Cruelty to Horse Owners." I carefully perused its contents, which are evidently a series of annoyances to which he has been subjected, and over which he feels undoubtedly aggrieved. Now, it is not my intention for one moment to say one word detrimental to the Society in question. Regarded in the light of an institution doing a great and a good work, it should command and receive the support of all lovers of animals, more especially we, as veterinary surgeons; but the subject-matter of the letter upon which I am commenting struck me as being particularly parallel in the past of my experience, with regard to some of the officers of the Society with whom I have been brought into contact; although, fortunately, at the present time, the inspector in this neighbourhood conducts his business in a perfectly fair and straightforward way. His method is to stop a lame horse (which, of course, is his duty), to tell the person in charge to take it to their veterinary surgeon; and if a veterinary certificate is given to say the horse is fit for such and such work, and they produce that certificate, the owner is allowed to work the animal unmolested—the inspector having sufficient faith, in whomever the M.R.C.V.S. may be, whether myself or a brother practitioner, to know that a veterinary surgeon has too much regard for his professional reputation, as well as a sincere desire not to countenance cruelty in any shape or form. But, unfortunately, that has not always been the case. I know, like "Alpha," what it is for prosecutions to have taken place in face of veterinary opinion and veterinary certificates, and persecution and unnecessary annoyance to be the inevitable result; and I could enumerate more than one case in which this has occurred. I have appeared for and against the Society—as my judgment has led me—and have been on many cases—in some, for the prosecution, as in wilful and revolting cases of cruelty, as "stabbing," tearing horses' tongues, kicking, starving. In such cases, let the offender have the full rigour of the law meted out to him, and it is only fortunate there is such a Society to take such cases up; but I have also been on the defence, in cases where prosecutions have taken place in questionable cases of wrings and sores, and likewise questionable cases of cruelty in lameness. It is on these questionable cases that I part company with the Society. Is this an old-standing collar or wither sore? or might it have arisen since the horse started on his journey? Is this an old-standing or chronic lameness? or does it arise from a recent sprain contracted on the road? These are the questions to decide, and I have always held, providing when the horse is stopped it is not allowed to continue work—that here the "Prevention of Cruelty to Animals" comes in, as its name implies; but the persecution of a prosecution in a questionable or doubtful case is, to my mind, damning to the Society; as the benefit of the doubt should be given, and the ends of the Society are met by the cessation of the horse from work. I should much like to see a little more unanimity of opinion also among veterinary surgeons in

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these cases, and thus avoid the ludicrous position not only we individually are placed in, but likewise the damaging effect it must have on the profession as a whole. The unfortunate position I noticed two veterinary surgeons were placed in lately, viz., Mr. Sewell and Mr. Leeney, must, I think, call forth our universal sympathy and regret, as very questionable cases for any prosecution at all.

E. L. DIXSON, M.R.C.V.S.

Margate, *Aug. 6th.*

FIRING HORSES IN HOT WEATHER.

SIR,—In warm climates there is generally great danger after firing a limb of sloughing of the skin over the part, which, even under the most favourable circumstances, leaves an unsightly blemish. At one time so great did I find this danger of sloughing to be, that I came to the conclusion that I would never again fire an animal during the hot weather. Recently I, however, have been obliged to operate on several animals during the summer months, and directly afterwards I have applied to the part an emulsion of equal parts of nitrate of bismuth and castor oil for about a week daily, then discontinuing the bismuth gradually and using the oil only, in fact removing the bismuth gradually with the oil; up to the present this application appears to be a success, no accident having taken place. I first took the idea from an article in an American medical paper, recommending this application for fissure of the nipple, and from this I was induced to try if it was applicable to veterinary practice; but I much regret that I have forgotten the name of the author in question.

JOSHUA A. NUNN, A.V.D.

June 30, 1891. Principal, Lahore Veterinary College.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. A. Nunn, A.V.D., Lahore; G. Gartside Mayor, Kirkham; F. B. Drage, A.V.D., Jubblepore; I. Matthews, Royal Horse Guards, London; E. L. Dixon, Margate; W. S. Adams, A.V.D., Hossir, India; C. Pack, Lymington; E. W. Hoare, Cork; R. S. Barcham, North Walsham: Dr. Duncan, Toronto; J. G. Cross, Shrewsbury; C. Sheather, London; L. Longhurst, A.V.D., York; A. J. Sewell, London; T. B. Goodall, Christchurch; G. J. R. Rayment, A.V.D., Bombay.

BOOKS AND PAMPHLETS: *R. Sisley, M.D.*, Epidemic Influenza; *P. J. Cadiot*, Traitment Chirurgical du Cornage Chronique; *E. Dele*, Eloge de J. M. Wehenkel; *G. J. R. Rayment*, Pasteur System of Protective Vaccination for Anthrax; *S. Giluni*, The Principles and Practice of Bovine Obstetrics (in Urdu); Bulletin des Seances de la Societe National de la Agriculture de France.

JOURNALS, ETC.: *Indian Veterinary Journal; Clinica Veterinaria; Recueil de Méd. Veterinaire; Repertorium der Thierheilkunde; Lancet; Journal de Med. Veterinaire; Moderno Zooiatro; British Medical Journal; Thierarzt; Journal of Comparative Medicine and Veterinary Archives; American Veterinary Review; Bacteriological World; Deutsche Zeitschrift fur Thiermedicin; Echo Veterinaire; Edinburgh Medical Journal; Mark Lane Express; Annales de Med. Vétérinaire; Live Stock Journal; Johns Hospital Bulletin.*

NEWSPAPERS: *Morning Advertiser; South-Eastern Counties Gazette; Lahore Civil and Military Gazette.*